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1923

# Forty-Fourth Annual Report

*of the*

# State Board of Health

## *of South Carolina*

For the Fiscal Year 1923 to the  
Legislature of South Carolina



COLUMBIA, S. C.  
GONZALES AND BRYAN, STATE PRINTERS,  
1924

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S. C. STATE LIBRARY



## LETTEL OF TRANSMITTAL

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Charleston, S. C., January 26, 1924.

*Honorable Thos. G. McLeod, Governor of South Carolina,  
Columbia, S. C.*

Sir: I have the honor to transmit herewith the 44th Annual Report of the Executive Committee of the State Board of Health.

It is gratifying to point out that the State Board of Health at the present time has a complete organization working effectively through a number of bureaus and departments under the direction of the State Health Officer in all fields of public health. The results of these numerous activities are set forth in detail in the various reports to which you are referred. The most striking illustration of what can be accomplished by intelligently directed effort is afforded by the very marked decrease in the number of deaths from malaria. In 1916 the death rate per 100,000 of population was 18 and in 1923 (11 months) it had fallen to 6. Captain L. M. Fisher, who is in charge of this work, says: "That for the first time in the history of the Department, three months passed in which no malaria deaths were reported by physicians." There was a definite increase in the number of deaths from pneumonia, diseases of the circulation and intestinal diseases, but deaths from all forms of tuberculosis, from typhoid fever and pellagra showed a decrease. The most notable increase occurred in the diseases of the circulation, the rate rising from 175 to 192.3. The cause of the increase is not clear. Unfortunately the activities of the Division of Venereal Disease control was much handicapped during this year by the failure of the General Assembly to make an appropriation for this specific purpose, but the cities and counties of Greenville, Spartanburg and Orangeburg placed their appropriations in the State Treasury to match the sum of \$1,592.77 given by the Federal Government so that a small amount was available. The importance of doing everything possible to control venereal disease cannot be emphasized too strongly and it is hoped that an appropriation will be made this year to enable the State Board of Health to expand its work in this field.

A new feature of public health work in this State was inaugurated by the establishment of the State Dental Clinic under the Department of Rural Sanitation with Dr. E. A. Early as Director. The results of the first year's work have been most encouraging. County clinics have been established in eleven counties already and six or eight more will soon follow; 4,973 cases have been examined; 2,292 have been treated, and 8,688 operations have been done.

The report of the Director of the Hygiene Laboratory shows that there has been a decrease in the cases of rabies, but this probably is only a temporary situation; and attention again is called to the urgent need of legislation providing for the compulsory vaccination of all dogs, which is the only means of prevention that has proved to be effective.

The reports of the Department of Rural Sanitation, the Bureau of Child Hygiene, the South Carolina Sanatorium, the Sanitary Engineer, the Epidemiologist, the Chemist and the Hotel Inspector, all indicate the splendid and efficient work that is being carried on in every field for the improvement of health conditions.

Respectfully,

ROBERT WILSON, JR., M. D.  
Chairman.



# GENERAL REPORT

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This is the forty-fourth annual report of the Executive Committee of the State Board of Health, and is for the year ending December 31, 1923.

This report is made in compliance with the Concurrent Resolution, which directs that every officer of the departments of the State Government required by law to make a report to the General Assembly shall contain only concise statements of recommendations and of the transactions of the officer of the department; and that no copy of any report, or document, or law, or proposed measure shall be made and printed at the expense of the State except what shall be absolutely necessary for the information of the General Assembly.

## EXECUTIVE COMMITTEE STATE BOARD OF HEALTH.

Robert Wilson, Jr., M. D., Chairman .....	Charleston
Robt. A. Marsh, M. D. ....	Edgefield
C. C. Gambrell, M. D. ....	Abbeville
E. A. Hines, M. D. ....	Seneca
Wm. R. Wallace, M. D. ....	Chester
William Egleston, M. D. ....	Hartsville
W. M. Lester, M. D. ....	Columbia
S. C. Calder, Ph. G. ....	Greenville
Samuel M. Wolf, Attorney General .....	Columbia
Walter E. Duncan, Comptroller General .....	Columbia
James A. Hayne, M. D. ....	
Secretary and State Health Officer, Columbia.	

## STAFF OF SOUTH CAROLINA DEPARTMENT OF HEALTH.

James A. Hayne, M. D., Executive Officer of State Board of Health.

A. H. Hayden, M. D., Epidemiologist.

E. L. Filby, State Sanitary Engineer.

J. H. Woodward, Hotel Inspector.

E. W. Grieshaber, Bookkeeper.  
 W. M. Riser, Secretary to Dr. Hayne.  
 John Roundtree, Janitor.

#### LABORATORY DEPARTMENT.

H. M. Smith, M. D., in charge.  
 James R. Cain, Bacteriologist.  
 Eugenia McDonald, Technician.  
 M. C. Davis, Stenographer.  
 F. L. Parker, M. D., Chemist and Bacteriologist, Charleston.

#### MALARIA CONTROL DEPARTMENT.

L. M. Fisher, Assistant Sanitary Engineer, U. S. P. H. S.,  
 in charge.  
 Robt. S. Baynard, Malaria Field Agent. (Resigned October  
 1, 1923.)  
 William Weston, Sanitary Inspector.  
 Lindsley Arthur, Sanitary Inspector.  
 Mary Dorn, Stenographer.

#### BUREAU OF CHILD HYGIENE.

Miss Ada Taylor Graham, Director.  
 Miss F. O. Winter, Secretary to Director.  
 Miss Mary McMillan, Secretary to Nursing Staff.  
 Miss Janie Fairey, Statistical Clerk.  
 Miss Jeanette Hayes, District Supervisor.  
 Miss Elizabeth Rohrbach, District Supervisor. (Resigned  
 August 1, 1923.)  
 Miss Nellie Cunningham, Acting District Supervisor.

#### BUREAU OF CHILD HYGIENE. (Continued.)

Miss Ruth Moore, Maternity & Infancy Supervisor.  
 Miss Laura Blackburn, Field Nurse.  
 Mrs. Henrietta Ablard, Field Nurse.  
 Ellen W. Carter, Colored Field Nurse.

#### BUREAU OF VITAL STATISTICS.

Mrs. C. W. Miller, Asst. State Registrar.  
 Helen Coles, File Clerk.



Mary Currell, Stenographer.

Lize Darby, Index Clerk.

## BUREAU RURAL SANITATION AND COUNTY HEALTH WORK.

Dr. L. A. Riser, Director.

Miss Flozella L. Gary, Office Secretary.

Mr. R. N. Covington, Moving Picture Operator.

*County Health Officers*—Leon Banov, M. D., Dr. R. G. Beachley, Dr. Walter Boone, Dr. G. C. Bolin, Dr. R. G. Hamilton, Dr. E. P. Knotts, Dr. J. J. Post, Dr. E. E. Epting, Dr. C. H. Farmer, (Dr. Baylis Earle.)

*County Nurses*—T. Lightsey, A. Tanksley, L. Honaker, R. Herbert, M. Flynn, C. Traynham, M. Foreman, L. Preach, B. Dalton, (R. B. Hellams), L. Spoenemann (left March 1st.)

*County Inspectors*—J. R. Wise, G. G. Scruggs, (left November 15th), J. B. Bailey, S. S. Welch, E. Z. James, Brooks Hubbard, R. Busch, (T. T. Fowler.)

*County Stenographers*—M. Mood, G. Smith, (W. L. Pitts.)

## SOUTH CAROLINA SANITORIUM.

Ernest Cooper, M. D., Superintendent.

J. C. Bonner, M. D., Assistant Physician.

Mrs. Estelle Cooper, Matron.

Carrie Spivey, R. N.

Pearl Leitzey, R. N.

Pupil Nurses.

Servants.

## PALMETTO SANITORIUM.

Horneithea Witherspoon, Housekeeper. (Vice Frances Baumgardner, resigned.)

Rebecca Belton, Nurse.

Mary White, Nurse.

Servants.

## THE BOARD'S QUARTERS.

The Executive Department of the State Board of Health, the Bureau of Child Hygiene, Malaria Control Department, and the Department of County Health Work occupy rooms on the second floor of the Palmetto Building.

The Laboratory remains in well arranged rooms furnished by the University of South Carolina, in LaConte College.

The Bureau of Vital Statistics is at the University of South Carolina in LeConte College.

The South Carolina Sanatorium for the treatment of Tuberculosis at State Park, eight miles from Columbia.

E. R. Squibb & Sons of New York continue to furnish the State reliable diphtheria anitoxin and vaccine virus.

### MISCELLANEOUS.

The reports of the various departments of the State Board of Health for the year 1923 are to be found in this volume. A careful perusal of these reports shows that we have progressed in a remarkable manner in systematizing public health work in South Carolina. Each department's work is excellent and the results obtained have been very satisfactory. There have been a larger number of deaths in South Carolina in 1923 than in 1922 but this has been principally due to the fact that there has been a large increase this year in deaths from pneumonia, both broncho and lobar, there having been a total of 1,558 deaths as compared with 1,241 from the same causes for the first ten months in the year. There has also been an increase in diseases of the circulation and diseases of the kidneys, these being in 1922, 3,574 and in 1923, 3,844. These can hardly come under the head of preventable diseases although much work can be done to lessen the death rate from these causes. The high death rate from pneumonia was probably due to an epidemic of influenza which occurred in January, February and March of last year. We are glad to report that we have had a lower death rate from tuberculosis this year than last year, the respective rates being 78.2 per 100,000 population in 1922 and 76.6 in 1923.

There has also been a remarkable decrease in the number of cases of pellagra, the rate in 1922 being 22.3 and in 1923, 16.6. The death rate from typhoid fever also shows a marked decrease, being reduced from 20.2 in 1922 to 15.3 in 1923, and when we remember that in 1915, when we had our first authentic reports from the Bureau of Vital Statistics, the death rate from typhoid fever was 35 per 100,000, one can see how much progress we are making in controlling this disease. Homicides have decreased but auto accidents have doubled. Suicides also show a decrease.



Diphtheria has decreased. Influenza shows a death rate of 291 in 1923 against 176 in 1922.

The report of the department of Rural Sanitation shows that there were ten counties in this State with a whole-time county Health Department this year. Of this number, Aiken, Anderson and Dillon are new comers into the fold, and we hope to add several others this year. The report of Dr. L. A. Riser, in charge of this department, is very complete and a careful reading of it will show the enormous amount of work done during the past year in the rural districts in South Carolina.

A new feature of this department is the work of the dental clinics which, although a small appropriation was made for the same, shows that 4,973 children were examined, 2,292 were treated, and that the Director traveled over 10,000 miles by automobile and visited 21 counties of this State. We hope that the activities of this dental work may be much increased during the coming year and that it may soon be possible for any child, no matter how poor, to have the handicap of decayed teeth removed. We know of no work being done by the Board of Health which will result in more benefit to the school child than these dental clinics. A bill is being introduced into the legislature this year which provides an appropriation of \$25,000 for this purpose, should so much be necessary, and we hope the legislature will give this bill careful consideration and that it may find favor with them for its passage would be a great factor in preserving the health of the children of South Carolina.

Immense strides were made this year toward immunizing the people of South Carolina against typhoid fever. A larger number of treatments for that purpose were sent out this year than have ever been sent out in the history of the State. 98,963 ampules were distributed, hence approximately 33,000 people were immunized.

The moving picture automobile was shown in 21 counties to 64,122 people, many of whom had never seen a moving picture, and the educational value of the ten films carrying in a graphic manner the lesson of disease prevention, was undoubtedly of great benefit in public health education in South Carolina.

The report of the Hygienic Laboratory shows a marked increase in the work done by that Laboratory during the past year. A total of 26,125 specimens were examined at the Laboratory.

516 Pasteur treatments were given and a list of counties in which such treatments were given is shown in the excellent report of Dr. H. M. Smith, Director of the Laboratory.

We feel sure that if the attention of the law-makers be drawn to the fact that rabies can be prevented in dogs by a simple inoculation at small cost they will devise some means so that this preventive treatment may be applied to the dogs and this disease, which causes so much anguish amongst the people in the State and so much distress and fear among those bitten by the rabid animals, may become a rare, if not an unknown disease, in South Carolina instead of being an ever-present menace.

Our laboratory is patronized by every physician in the State and the Wasserman tests made for syphilis during the past year were 14,589.

Mr. C. W. Miller, who is in charge of the Vital Statistics department for the State of South Carolina, though paid less than any head of a department in the State, still continues to show excellent results in obtaining, registering and filing births and deaths in South Carolina. His reports show that for the white births than black births in the State, although deaths first time in the history of the State there were more among the blacks still exceed deaths among the whites. His report, which is in this volume, has very interesting matter in regard to the distribution of disease and should be carefully read.

Of especial interest to the public and to the legislature should be the Bureau of Child Hygiene, Maternity and Infancy. This department, through the efforts of Miss Ada Taylor Graham, who succeeded Mrs. Ruth A. Dodd as Director in charge of this Bureau, has had a very successful year. Her report shows that there have been 43,369 visits made by members of this department during the past year to homes and schools. It shows that there have been 1,956 corrections of dental defects, 316 eye treatments, 248 throat treatments, 652 tonsillar and adenoid operations, 10,299 vaccinations, and 10,731 anti-typhoid treatments. The first part of her report is devoted to administration, how it is carried on and how salaries are paid. It will be of interest to the legislature to see how many different activities, paid by different agencies, are correlated under this department.

Of special interest is the work of the child health truck, which was put out entirely at the expense of the federal govern-



ment. It visited thirty counties and examined 6,000 children under seven years of age. It was in charge of a field nurse, an assistant nurse, and one mechanician. It created great interest and was of immense educational value wherever it stopped. This truck and its personnel visited the schools in thirty counties. The children were brought there and examined, usually by the local physicians, and those children who were found needing special attention were brought to the county seat and there examined in the presence of their family physician by a pediatricist and an orthopedic surgeon. Advice was given and frequently the children were taken to hospitals and their disabilities corrected.

The State again failed to furnish any funds for the important work of venereal disease control work last year but with federal funds, matched by funds from Greenville, Spartanburg and Orangeburg, we have been able to do a little work this year along these lines. These clinics have done most excellent work and an analysis of the work is submitted.

We hope that the legislature will see to it that sooner or later funds are provided for this most necessary work, for any physician will assure you that the inclusion of syphilis in a diagnosis is absolutely essential in the scientific treatment of any disease.

The report of the epidemiologist, Dr. A. H. Hayden, shows efficient work and how necessary such work is in the State. His report, which is found elsewhere in this volume, shows that he visited the length and breadth of the State correcting various conditions which he found and endeavoring to prevent the spread of communicable diseases. The fact that we have had a great deal of smallpox in the State during the past year has made his duties exceedingly onerous.

A condition has arisen which I wish to call to the attention of the legislature; viz., quite a number of trustees of schools have refused to carry out the Act of the General Assembly requiring school children to be vaccinated before they can be admitted into the schools of the State. We urgently request your Body to take action in regard to this matter. Either add to the clause providing that the County Superintendent of Education shall be held responsible for the non-compliance with this law regarding the schools of the county, or else repeal the law. We feel

that we should have the most hearty cooperation from the County Superintendents of Education in this work, for by the vaccination of school children we prevent the closing of schools on account of smallpox which may exist in communities. Already children at school are handicapped by the closing of schools for other communicable diseases for which we have no preventive serums, such as measles, scarlet fever, etc. It is inexcusable that children should be allowed to attend school in South Carolina without having been protected by vaccination and it seems strange that two hundred years after Jenner's discovery, which was one of the greatest boons to mankind in preventing this loathsome disease, that we should have to resort to more strenuous arguments in order to get parents to let their children avail themselves of this great discovery.

In the work of taking care of children in South Carolina we hope to add this year a new feature; viz., the cure of indigent crippled children. This plan was taken up by the Board at its October meeting and Dr. W. A. Boyd of this city, who is the only doctor in this State who is devoting his time exclusively to orthopedic surgery, generously offered his services free of charge to take care of one hundred crippled children, providing the legislature would give the sum of Five Thousand (\$5,000.00) Dollars, which he estimates would pay all hospital expenses of the child while it is being treated. This is a great step forward and we hope that soon we may do for our children what North Carolina is doing for hers, viz., have a place where children can be sent who are crippled and can there receive such scientific treatment as may restore them to all the joys of childhood which are denied them by their crippled condition and that they may become useful citizens of South Carolina instead of being a constant burden to themselves and their families. This fund, if given, will be administered by the State Board of Health solely for the purpose of taking care of indigent crippled children.

A careful inspection of State, Penal and Charitable Institutions has been made this year and the reports are in this volume. The inspections show improvements over conditions of last year, but there is still much room for improvement. The recommendations made in these reports should be carefully looked into by the legislature and carried out as far as possible.



The Committee on State Educational Institutions found wonderful improvement this year in the condition of all State Educational Institutions. A rigid inspection was made last year and the recommendations of the Board have been in the main carried out. Especially is this true of Clemson College, which now is in a very satisfactory condition from a sanitary standpoint. Our State Epidemiologist and our State Sanitary Engineer made careful inspections of all State Educational Institutions and their reports are appended.

The report on malaria control submitted by Capt. L. M. Fisher, who is in charge of this department, is a most interesting and instructive document. It is urged that members of the legislature read this report, which is in this volume. There is no more important work being undertaken by the State Board of Health than that of educating the people of South Carolina in regard to how to prevent malaria.

South Carolina and Palmetto Sanatoria have done most excellent work during the past year. Dr Cooper's report shows there have been 110 white patients received this year and 51 negroes. It also shows that 25,382 hospital days were supplied by the institution.

We were fortunate in securing the services this year of Mrs. Isabelle L. Cain as Field Agent for the Sanatorium. She has been untiring in her efforts and has seen to it that every want of the patients at the Sanatorium was brought to the attention of the Board and we feel that no Sanatorium in the United States receives as careful and individual attention to its patients as is now received at the South Carolina Sanatorium. The needs of the Sanatorium are many but we hope this year to supply an infirmary for women, a home for the Superintendent, a nurses' home; and the other needs which we hope the legislature will see fit to give us in the near future are a building for tuberculous children, a central heating plant, some general building where the patients can be amused and kept from reflecting upon their long up-hill fight against tuberculosis, a silo, and sheds for cattle. We also again call your attention to the fact that we need a small piece of land which is practically right in front of the infirmary.

Dr Cooper's report shows the extremely low per capita cost per patient, due to care in buying and strict economy in all departments.

The Superintendent's report and the report of the Field Secretary are found elsewhere in this volume.

Our State Sanitary Engineer, Mr. E. L. Filby, has, as his report shows, been kept busy by the frequent demand upon him by the cities and elsewhere for information and advice in regard to the best manner of protecting water supplies and for the proper disposal of sewage.

The report of Mr. J. H. Woodward, who is our State Inspector of hotels and restaurants, is appended. Every one feels that his work has greatly raised the standards of hotels and restaurants in South Carolina, and the traveling public feel that no let-up should be allowed in this most important work; viz., of keeping hotels and restaurants in a sanitary condition for the traveling public.

Dr. F. L. Parker, State Chemist, has made chemical and bacteriological examinations of water supplies of cities and municipalities, as required by statute passed by the last General Assembly. His report is found elsewhere.

The work of the central department of the State Board of Health, known in the Budget as "Superintendence and accounts", has had more than its usual amount of work to do this year, owing to the activities of the other departments. The State Health Officer, as the executive officer of the State Board of Health, has charge of all departments, and those denominated as directors are in charge of the departments but under the direct supervision and control of the State Health Officer. He has been kept extremely busy coordinating the work of the various departments and giving advice and assistance to those in charge. The bookkeeper of this department has to keep all accounts of the various departments who are spending State money. The secretary to the State Health Officer has the correspondence of this department to carry on. This department also has the distribution of biologics—diphtheria antitoxin, vaccine virus, tetanus antitoxin, toxin antitoxin for diphtheria prevention, and it is the work of the secretary to see that the demands made by doctors and the public are promptly supplied. This entails an immense amount of work on the part of the secretary. However, we feel sure that all requests have been filled as promptly as possible during the past year.



# REPORT OF EPIDEMIC AND CONTAGIOUS DISEASES OCCURRING IN SOUTH CAROLINA DURING 1921.

By JAMES A. HAYNE, M. D., Chairman of Committee.

## SMALLPOX.

The following amount of smallpox vaccine was distributed by quarters:

1922		1923	
First Quarter .....	\$1,320 00	First Quarter .....	\$1,560 00
Second Quarter .....	823 35	Second Quarter .....	776 90
Third Quarter .....	2,145 00	Third Quarter .....	1,950 00
Fourth Quarter .....	1,950 00	Fourth Quarter .....	3,510 00
<hr/>		<hr/>	
Total .....	\$6,238 35	Total .....	\$7,796 90

The price paid was \$00.06½ per point and the number of points distributed were 119,952.

The following table is presented, showing the number of cases diagnosed as diphtheria, receiving antitoxin.

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Abbeville	5		2	1	2	11	3		8	16	9	1	69
Aiken	3	2						9	10	8	1	2	37
Allendale										2	1		3
Anderson	2	6	4	17			9	12	8	2			139
Bamberg	2	3						16	49	24		8	23
Barnwell		3		2				2	5				12
Beaufort									1	1	1	1	4
Berkeley									1	1	1		3
Calhoun	1			2					1	1	1		5
Charleston	13	11	3	8	6	2	5	4	19	15	32	20	145
Cherokee			10	5	3			13	11	8	8		58
Chester	7						5		17	11	4		27
Chesterfield	7	8			5	6		7	7	17			67
Clarendon	1	9		1	2		2	3	2	4	5	1	31
Colleton	8							5	1	1	4	2	20
Darlington	17	6					5		2	6		4	40
Dillon	27			2	2			17	5	13	1		63
Dorchester	1	2						4	4	1	2		16
Edgefield	1	1	1	5								23	28
Fairfield											5		5
Florence	43	2	1	11		5	10	10	9	12	16	14	133
Georgetown				12			1		1	1			15
Greenville	7	7		8	3	1		17	17	48	15	5	128
Greenwood	5	2		10		13	3	1	6	11	10		61
Hampton	1	2		1						1	1		6
Horry		9			7			10		21		7	54
Jasper		4						2					13
Kershaw		16			1	8			4	9	4	8	54
Lancaster	5			8						6			19
Laurens	1						2	3	3	2	7		25
Lee								3					3
Lexington	18	2		1		3		1	8	8	10	5	56
McCormick					1	3			1				6
Marion			12		6					2		7	33
Martinsboro	3				3		2	1	2	5	7	1	24
Newberry	7	1		12			2		1	14	4	2	43
Oconee	10	2	2	6	4			3	6	5	7		45
Orangeburg	3	20	10		1	2	5	24	27	7	14	8	120
Pickens	4							7	6	3	19	3	46
Richland	25	3	2	1	4	2		6	7	24	31	4	111
Saluda	4	2						4	2	2	1	1	23
Spartanburg	16	23	6	4	12	3	4	5	21	58	37	7	192
Sumter	2	1	6	3	2	4		5	2	7	2	4	38
Union	7	2	1	1	3	9		12	3	8	8		50
Williamsburg	7	2					1	3	1	1	11		34
York	1	3		5	1		13	1	14	27	21	10	96
Total													2 223



The amount of diphtheria antitoxin consumed as compared with 1922 is as follows:

DIPHTHERIA TABLE NO. 2.

	1922				1923			
	1,000 Units.	5,000 Units.	10,000 Units.	20,000 Units.	1,000 Units.	5,000 Units.	10,000 Units.	20,000 Units.
January .....	47	72	168	18	116	212	287	40
February .....	38	51	160	13	105	103	176	72
March .....	65	70	113	15	79	59	67	24
April .....	29	69	91	17	75	86	121	37
May .....	53	85	152	33	41	50	72	17
June .....	53	70	143	13	18	36	98	10
July .....	48	80	146	18	82	70	122	43
August .....	140	176	346	57	107	126	208	32
September .....	331	337	628	116	99	124	274	86
October .....	303	350	586	123	195	226	484	173
November .....	187	230	486	90	222	199	369	153
December .....	113	175	289	46	179	99	160	85
Total .....	1 407	1 765	3 308	559	1 318	1 390	2 438	772

The expenditures for diphtheria antitoxin as compared with 1922 are as follows:

DIPHTHERIA TABLE NO. 3.

1922		1923	
Month	Cost	Month	Cost
January .....	632 50	January .....	\$ 1,273 50
February .....	554 00	February .....	971 00
March .....	487 50	March .....	403 50
April .....	422 00	April .....	635 50
May .....	682 50	May .....	352 00
June .....	547 50	June .....	353 00
July .....	590 00	July .....	644 50
August .....	1,455 50	August .....	906 50
September .....	2,763 00	September .....	1,307 50
October .....	2,695 00	October .....	3,205 00
November .....	2,058 50	November .....	2,020 50
December .....	1,248 50	December .....	1,020 50
Total .....	\$14,136 50	Total .....	\$13,093 00

## DIPHThERIA ANTITOXIN DISTRIBUTORS.

## ABBEVILLE COUNTY.

Abbeville .....	McMurray Drug Co.
Donalds .....	Johnson Drug Co.
Due West .....	R. H. Brice Drug Co. Todd Drug Co.

## AIKEN COUNTY.

Aiken .....	Hall's Pharmacy, W. J. Platt & Co.
Graniteville .....	E. E. Platt, W. C. R. Turnbull
Lake View .....	Smith's Drug Store
Langley .....	Langley Drug Co.
North Augusta .....	W. E. Mealing, M. D.
Salley .....	Jones Pharmacy
Wagener .....	Wagener Drug Co.
Bath .....	Bath Pharmacy

## ANDERSON COUNTY.

Belton .....	Frierion's Pharmacy, Hertons' Pharmacy
Anderson .....	Bigby's Pharmacy, Peoples Pharmacy, Evans Pharmacy
Honea Path .....	Bolt Drug Co
Iva .....	Iva Drug Co.
Pelzer .....	W. W. Griffith
Pendleton .....	E. G. Evans & Sons
Townville .....	J. M. Hobson, M. D.
Williamston .....	Guyton Drug Co.

## BAMBERG COUNTY.

Bamberg .....	Mack's Drug Store
Denmark .....	Peoples Pharmacy
Erhardt .....	Peoples Drug Co.
Olar .....	R. & H. Drug Store

## BARNWELL COUNTY.

Allendale .....	R. P. Searson Drug Co.
Barnwell .....	Best Pharmacy, Mace Drug Co.
Blackville .....	Epps Pharmacy
Fairfax .....	Fairfax Drug Store
Williston .....	J. M. Smith & Son

## BEAUFORT COUNTY.

Beaufort .....	C. G. Luther
Port Royal .....	M. B. Cope

## BERKELEY COUNTY.

Moncks Corner .....	Moncks Corner Pharmacy
St. Stephen .....	T. J. Boykin

## CALHOUN COUNTY.

St. Matthews .....	Fair's Pharmacy
Fort Motte .....	J. A. Woodley, M. D.



## CHARLESTON COUNTY.

Charleston ..... Roper Hospital, Paragon Drug Co. G. W.  
 Aimar & Co. Frierson Drug Co., Jno. A. McFall, C. F.  
 Schewettmann & Son, Paragon Drug Co., Zeigler's Phar-  
 macy.  
 Mt. Pleasant ..... H. L. Wacker

## CHEROKEE COUNTY.

Blacksburg ..... Iron City Pharmacy  
 Gaffney ..... Gaffney Drug Co.

## CHESTER COUNTY.

Chester ..... Standard Pharmacy, Chester Drug Co.  
 Great Falls ..... Republic Pharmacy

## CHESTERFIELD COUNTY.

Cheraw ..... T. E. Wannamaker & Son  
 Chesterfield ..... D. H. Laney  
 Jefferson ..... Kennington's Pharmacy, P. T. Gantt Drug Store  
 McBee ..... McBee Drug Co.  
 Pageland ..... Kennington's Pharmacy  
 Rnby ..... Ruby Drug Co. Kennington's Pharmacy

## CLARENDON COUNTY.

Manning ..... Dickson's Drug Store  
 Paxville ..... Thomas W. Gunter  
 Summerton ..... Palmetto Drug Co., Summerton Drug Co.  
 Turbeville ..... C. E. Gambel  
 New Zion ..... E. B. Gamble, M. D.

## COLLETON COUNTY.

Walterboro ..... John M. Kline, Walterboro Drug Co.

## DARLINGTON COUNTY.

Darlington ..... Hill's Drug Store, McFall's Drug Store  
 Lamar ..... Palmetto Drug Co.  
 Hartsville ..... Boyd-Powe Drug Co.  
 Hartsville ..... Robert Stewart, Jr.

## DILLON COUNTY.

Dillon ..... Evans Pharmacy, Moody Drug Co.  
 Latta ..... Peoples Drug Co.  
 Page's Mill ..... Smith's Pharmacy

## DORCHESTER COUNTY.

St. George ..... P. M. Judy  
 Summerville ..... Tupper Pharmacy Co.

## EDGEFIELD COUNTY.

Edgefield ..... C. A. Bird, Mitchell & Cantelou, J. D. Holstein  
 Johnston ..... Peoples Drug Co.

## FAIRFIELD COUNTY.

Ridgeway ..... B. G. Team, M. D., Ridgeway Pharmacy  
 Winnsboro ..... J. H. McMaster & Co.

## FLORENCE COUNTY.

Florence .....	F. U. Lake Drug Co.
Lake City .....	Lake City Drug Co.
Scranton .....	W. S. Lynch
Timmons ville .....	Marvin Drug Co., Cole Drug Co.
Pamplico .....	Peoples Drug Store
Olanta .....	Farmers & Merchants Drug Co.

## GEORGETOWN COUNTY.

Georgetown .....	Iseman Drug Co.
Andrews .....	Thompson's Drug Co., Hogan's Drug Store

## GREENVILLE COUNTY.

Fountain Inn .....	Redick's Pharmacy
Greenville .....	Armstrong Pharmacy, Carpenter Bros., L. H. Strainger, Doster Bros. & Bruce, Reynolds & Earle.
Greer .....	The Greer Drug Co., Corner Drug Co.
Piedmont .....	Suber Drug Co.
Simpsonville .....	Simpsonville Drug Co.

## GREENWOOD COUNTY.

Greenwood .....	Harris Drug Co., Greenwood Drug Co.
Ninety-Six .....	Holmes Pharmacy
Ware Shoals .....	Ware Shoals Mfg. Co. (Drug Dep't)
Troy .....	Troy Drug Store

## HAMPTON COUNTY.

Estill .....	Estill Pharmacy
Hampton .....	Chas A Rush

## HORRY COUNTY.

Conway .....	Horry Drug Co., Conway Drug Co.
Aynor .....	Aynor Drug Store
Loris .....	Nye's Pharmacy

## JASPER COUNTY.

Ridgeland .....	Janner's Pharmacy
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## KERSHAW COUNTY.

Bethune .....	Bethune Drug Co.
Camden .....	W. R. Zemp
Kershaw .....	Heyes & Gregory

## LANCASTER COUNTY.

Heath Springs ..	Heath Springs Pharmacy, W. T. Stover & Sons
Heath Springs ..	Timmons Drug Co.
Kershaw .....	Hays and Gregory
Lancaster .....	Standard Drug Store



## LAURENS COUNTY.

Clinton .....Kellers Drug Store  
 Gray Court .....Gray Court Drug Store  
 Laurens ....Laurens Drug Co., Powe Drug Store, Putnam's Drug  
 Store  
 Cross Hill .....Cross Hill Pharmacy, J. H. Miller, M. D.

## LEE COUNTY.

Bishopville .....Law's Drug Store, Parker Drug Co.

## LEXINGTON COUNTY.

Batesburg .....Ridgell Drug Co.  
 Chapin .....J. W. Eargle  
 Leesville .....Citizens' Drug Co.  
 Lexington ....Riley Drug Co., Palace Drug Co., Harmon Drug Co.  
 Pelton .....D. R. Kneece  
 Swansea .....Johnson's Pharmacy, Livingston Pharmacy,  
 Swansea Drug Co.  
 New Brookland .....Whetsell's Drug Store

## McCORMICK COUNTY.

McCormick .....McCormick Drug Co.

## MARION COUNTY.

Marion .....J. S. Davis  
 Mullins .....Palace Drug Co., Kirby's Pharmacy  
 Nichols .....Nichols Pharmacy

## MARLBORO COUNTY.

Bennettsville .....Douglass & Breeden  
 Blenheim .....Napier's Drug Co.  
 Clio .....Clio Drug Co.  
 McColl .....Moore Drug Co.

## NEWBERRY COUNTY.

Little Mountain .....J. M. Sease  
 Newberry ....Newberry Drug Co., Gilder & Weeks, Mayes Drug  
 Store  
 Prosperity .....Prosperity Drug Co.  
 Whitmire .....Whitmire Drug Co.

## OCONEE COUNTY.

Clemson College .....L. C. Martin  
 Fair Play .....W. C. Mayes  
 Walhalla .....Peoples Pharmacy, Bell's Drug Store  
 Westminster .....Frierson's Drug Store, Stonecypher Drug Co.

## ORANGEBURG COUNTY.

Branchville .....Noble Drug Store, Pipkin Pharmacy  
 Elloree .....P. L. Felder  
 Eutawville .....E. O. Horger  
 North .....Peoples Drug Co.  
 Orangeburg .....Lowman Drug Co., Wannamaker Drug Co.  
 Springfield .....Farmers Drug Store, Edisto Drug Co.  
 Neeses .....Williams Drug Store  
 Bowman .....Bowman Drug Co.

## PICKENS COUNTY.

Central .....	Central Drug Store
Easley .....	Palmetto Pharmacy
Liberty .....	Hunter's Pharmacy
Pickens .....	Pickens Drug Co.

## RICHLAND COUNTY.

Columbia .....	Blanding Street Drug Store, McGregor's Drug Store, Taylor Drug Co., Wingfield Pharmacy.
Columbia Hospital ....	Heinitsh's Drug Store, Waverly Drug Co.
Blythewood .....	M. Langford

## SALUDA COUNTY.

Ridge Spring .....	Ridge Drug Co.
Saluda .....	Saluda Drug Co.

## SPARTANBURG COUNTY.

Campobello .....	Campobello Drug Co.
Converse .....	Peoples Drug Co.
Cowpens .....	Cowpens Drug Co.
Inman .....	Inman Drug Co.
Landrum .....	Landrum Drug Co.
Pacolet .....	Pacolet Mfg. Co.
Spartanburg .....	Kennedy's Drug Store, Arthur Irwin, Ligon's Drug Store, Henry's Drug Store, K-W-N Pharmacy, Todd Drug Co.
Woodruff .....	Workman & Stemson, O. E. Westmoreland
Greer .....	Greer Drug Co.
Clifton .....	Taylor Drug Co.

## SUMTER COUNTY.

Mayesville .....	The Peoples Pharmacy
Sumter .....	Hearson's Pharmacy, Sibert's Drug Store, De Lorme Pharmacy, Mitchell's Drug Store

## UNION COUNTY.

Jonesville .....	Jonesville Drug Store
Union .....	Palmetto Pharmacy, People's Drug Store, Glymph's Pharmacy

## WILLIAMSBURG COUNTY.

Johnsonville.. .....	Johnsonville Drug Co.
Kingstree .....	Kingstree Drug Co.

## YORK COUNTY..

Clover .....	Clover Drug Co.
Fort Mill .....	Lyttles Drug Co.
Rock Hill .....	Rock Hill Drug Co.
Sharon .....	Sims Drug Co.
York .....	York Drug Co.
Hickory Grove .....	Hood Drug Co.



## MINUTES.

Columbia, S. C., April 18, 1923.

The regular annual meeting of the Executive Committee of the State Board of Health was held in the Charleston Hotel, at Charleston, S. C., April 18, 1923, with the following members present: Dr. Robert Wilson, Jr., Chairman, Dr. Robt. A. Marsh, Dr. C. C. Gambrell, Dr. E. A. Hines, Dr. Wm. Eggleston, Dr. W. M. Lester, Dr. W. R. Wallace and the Secretary.

The Minutes of the last meeting were read and approved.

Reports from the various departments were read and approved.

Dr. Wilson read the report to be submitted to the House of Delegates of the South Carolina Medical Association.

Informal discussion was held in regard to the South Carolina Sanatorium.

The appropriation made by the last General Assembly was read and discussed, and the salaries for positions not specifically designated by the General Assembly were presented by the Secretary and approved.

The following officers were elected: Dr. Robert Wilson, Jr., Chairman; Dr. James A. Hayne, Secretary.

The following County Health Officers were selected: Dr. C. H. Farmer for Aiken County; Dr. E. E. Epting for Anderson County.

Dr. E. E. Early was selected to take charge of the Dental Clinics throughout the State.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,  
Secretary.

Attest:

Columbia, S. C., July 20, 1923.

A regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary, at 10 A. M., July 20, 1923, with the following members present: Dr. Robert Wilson, Jr., Chairman, Dr. Robt. A. Marsh, Dr. C. C. Gambrell, Dr. E. A. Hines, Dr. Wm. Eggleston, Dr. W. R. Wallace, Dr. W. M. Lester, Dr. S. C. Calder, and the Secretary.

The minutes of the last meeting were read and approved.

Reports from the various departments were read as follows: Malaria Control, Bureau of Vital Statistics, Hygienic Laboratory, Rural Sanitation, South Carolina Sanatoria, Bureau of Child Hygiene, Hotel Inspection, and report from Mr. E. L. Filby, State Sanitary Engineer.

*New Business:*

The typhoid fever situation in Lower Street in Columbia was discussed and the State Health Officer was directed to investigate the local board of health of School District No. 4, Richland County, and have them show cause why they should not be removed for neglecting their duty.

Dr. Ernest Cooper appeared before the Board and pointed out the necessity of servants' quarters at the South Carolina Sanatorium, it being impossible to secure a proper number of servants as there are no quarters for them. A committee of five was appointed to see the Governor and request that \$3,000 be set aside from the Civil Contingent fund for the purpose of building these houses. The following were appointed on the Committee: Dr. Wm. Egleston, Dr. Robt. Wilson, Dr. W. R. Wallace, Dr. C. C. Gambrell and the Secretary.

It was pointed out that the Field Secretary was using her own car for going back and forth to the Sanatorium, which required two trips a week, and Dr. Egleston moved that in submitting the Budget that plans be made for the purchase of a car for the Field Secretary.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,  
Secretary.

Attest:

Columbia, S. C., November 20, 1923.

A regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary, at 10 o'clock A. M., November 20, 1923, with the following members present: Dr. Robt. A. Marsh, Dr. C. C. Gambrell, Dr. E. A. Hines, Dr. Wm. Egleston, Dr. W. R. Wallace, Dr. S. C. Calder and the Secretary.

The minutes of the last meeting were read and approved.



Reports were read from the Hygienic Laboratory, South Carolina Sanatorium and the Bureau of Child Hygiene.

It was moved by Dr. Egleston that Mrs. Cain be instructed to look into the matter of a dietitian for the Sanatorium and after such investigation that the matter be called to the attention of the Committee, who will suggest a remedy.

The Secretary was directed to see that an Arcola heating system was installed in the Sanatorium as soon as possible.

It was moved and carried that the Secretary be directed to submit a plan for the organization of a subdivision of the Bureau of Child Hygiene for the relief of crippled children.

It was moved, seconded and carried, that periodical medical examinations of well people be urged upon the medical profession.

It was moved by Dr. Egleston, and carried, that the Executive Committee of the State Board of Health recommend to Dr. D. B. Johnson of Winthrop College, and Dr. Riggs of Clemson College and to the heads of all other State supported institutions and colleges, that typhoid vaccination be required of all students before admission and be repeated at least every two years.

An Ordinance, entitled "An Ordinance to Regulate the Sale of Meat and Meat Products for Food Within the City of Sumter, and to Prescribe the Conditions under Which Animals from Which Such Meat is Obtained Shall be Slaughtered and Butchered", was submitted by the Town of Sumter and approved.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,  
Secretary.

Columbia, S. C., December 18, 1923.

A regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary, at 10 o'clock A. M., December 18, 1923, with the following members present: Dr. Robert Marsh, Dr. C. C. Gambrell, Dr. Wm. Egleston, Dr. E. A. Hines, Dr. Wm. Lester, Dr. W. R. Wallace, Dr. S. C. Calder, and the Secretary, Dr. Gambrell acting as Chairman in the absence of Dr. Robert Wilson.

The Minutes of the last meeting were read and approved.

Dr. P. H. Brigham, City Health Commissioner of Florence, S. C., appeared before the Board with proposed public health ordinances of the City of Florence. These were referred to a committee for consideration, consisting of Dr. Hayne and Dr. Lester. Dr. Brigham also had several recommendations to make to the Board in regard to sanitary closets for contractors in the erection of buildings. He was asked to put these recommendations in writing.

Reports were read from all Departments, and after the reading of these reports the following resolution was passed: "*Resolved*, That each and every one of those in charge of the various departments of the State Board of Health be thanked for faithful work done during the past year;

"*Resolved*, That special thanks and congratulations be extended to Capt. Fisher on his report of malaria work for the past year;

"*Resolved*, That Mr. C. W. Miller be especially recommended to the legislature for faithful services, and that a raise of his salary be requested;

"*Further resolved*, That Mrs. Cain be thanked, and that the legislature be asked for an appropriation for the purchase of the land necessary for the needs of the Sanatorium".

It was moved by Dr. Egleston that a copy of all reports of the various educational and penal and charitable institutions be sent to the respective heads of these institutions and to the active members of the executive board of directors of these institutions.

It was moved that the State Health Officer be directed to investigate the cost of a radio broadcasting station to be operated in conjunction with the Medical College in Charleston.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,  
Secretary.

Attest:



## REPORT ON PENAL AND CHARITABLE INSTITUTIONS.

*To the Chairman and Members of the Executive Committee of the State Board of Health of South Carolina.*

Gentlemen: I beg to report to you that I have made our annual sanitary inspection of the State Hospital on August 3rd, 1923.

The admissions to this hospital during the first half of the year numbered 461; deaths for the same period numbered 153, and death rate average for the same time was 5.2%. This very small death rate is an indication as to the sanitation of the Hospital and of the efficiency of its Medical staff and management. All patients admitted are given a thorough physical and mental examination. Wasserman test, typhoid prophylaxis and vaccination against smallpox are the regular routine.

We found an over-crowded condition, as has been reported by us before, and this can only be remedied by the removing of the colored patients to the new building which was under construction at State Park at the time of our visit or inspection, and we hope that by another year the congested state will be very much relieved.

The sanitary conditions at the Hospital are all that are possible under existing conditions. The dining room was clean and in fine shape; the tables were loaded with an abundance of nourishing food which seemed well prepared; the kitchen was not in as good shape as at our last report; equipment not satisfactory, the hood over the pots having rusted out; the ceiling above has given away and things here generally need overhauling. We were told by the Superintendent that all this would at a very early date be put in first-class condition; that he had ordered a new hood and suction fan, and that the ceiling would be replaced as quickly as possible. Since our last report a new and adequate vegetable room has been completed.

At State Park we found the kitchen very greatly in need of repairs; no hood over the stove, no suction fans; overhead ceiling smoked and stained, and altogether presenting a very unsightly appearance.

The wooden bedsteads at State Park in the men's quarters, I think, are very unsanitary and should be replaced by iron

ones. The toilets in both men's and women's quarters were in bad repair; but few of them flushed, and very nearly all the stools were broken. I was informed by Dr. Williams that this condition would be corrected as soon as the parts which he had ordered arrived, and that the condition was a mortification to him. I found in the women's ward only ten stools for 325 women, and I think this number of stools inadequate for this numbers of individuals.

At the T. B. hospital, for whites only, we found 21 women and 19 men. There is no provision made for colored T. B. patients.

A well equipped Dental office and a full-time dentist are doing much for the health and happiness of the inmates

Gentlemen, the sanitary condition of this institution can never be what the Superintendent and his staff wish it to be until sufficient room is provided for them to care for the ever increasing number of our most unfortunate people who have to go to this institution for care and treatment; we, therefore, should urge the Legislature to do all they can possibly do for the relief of the wofully crowded or over-crowded condition that now exists.

Respectfully submitted,  
(Signed) ROBT. A. MARSH, M. D.

*To the Chairman and Members of the Executive Committee of the State Board of Health.*

Gentlemen: I wish to report to you that on the 9th of July, accompanied by our efficient Sanitary Engineer, Mr. Filby, I visited the State Penitentiary and made our annual sanitary inspection of the Institution.

We are delighted to say that, generally speaking, many changes are noticeable for the betterment of the institution, and yet there is still room for further improvements, which we confidently believe will be put into effect ere another year, by the present officials, who seem enthusiastic and determined to use every means at their command to take this a model prison. I feel quite sure that if it is possible for the legislature to make an appropriation sufficient to meet the demands that a new dining room, kitchen and chapel of a modern prison type will be the delight of the officials in charge. There is no possible way



to make the present wooden building, which is now used for the triple purpose of kitchen, dining room and chapel, a sanitary one. Therefore, it should be condemned and not used. The kitchen has been improved some by having three large windows cut in the west side, thereby giving more air, light, etc., making it more comfortable but no more room. There is still a scarcity of cooking utensils, but if these were had there would be no room for them. Screens are everywhere in the dining room and kitchen, the floors and tables were clean, and we saw only the fewest number of flies. We therefore concluded that the sanitary condition in this department was just about all one could expect to find in a building of this type. The dinner served to the prisoners on the day of my visit was, boiled peas, boiled bacon, molasses, corn bread and one raw tomato to each one, with water.

The dining room for the females is new and clean. They were served the same food as the men. We were sorry to see numerous roaches crawling over the food in the dining room of the females.

This year we found quite improved conditions in the Hospital, yet conditions are far from ideal. We were able to find properly kept records of all patients admitted, charts showing diagnosis, treatment, etc. The floors were clean, bed coverings clean, mattresses, most of them, very soiled; most of springs poor and apparently uncomfortable.

The toilets here are in the open ward and not screened at all, and this same condition exists in the quarters for the trustees. The toilets are in the open and the dining table is within a few feet of the open toilet. This condition is very undesirable and should not be tolerated. Certainly it is not conducive to good health.

There is no provision for T. B. patients, and those who are bed-ridden are in the ward with other sick. Those with T. B. who are ambulant associate daily with the other prisoners—eat, drink, bathe and use the same towels. Conditions of this kind should not exist. All T. B.'s should be segregated and kept so. I would like to see the old T. B. Hospital put in order and used for such patients. It is an ideal building and only needs to be re-barred or made safe. This beautiful building is now used as a display room for furniture and a stock room for materials used in making up furniture.

The main cell block is kept clean, and as far as possible the sanitary conditions are carefully looked after. Many of the cells are attractively and artistically kept; others clean and neat, and still others that are poorly kept. The individual prisoner has much to do with the appearance of the cells. The toilet arrangements in this building have been wonderfully improved within the last two years. The practice of giving prisoners tin cans as urinals at night should be abandoned. We were able to detect the vile odor of decomposed urine in some of the cells and the can habit was the explanation.

We are glad to say that prisoners are no longer kept in the death house for an indefinite period of time, and those who are there awaiting their execution are several times during each week given a glimpse of the outside world and get some fresh air and a little sunshine.

The women's ward is very much better than we found it last year. More room makes it less congested and of course more comfortable for the inmates. The additional room is the result of the new and clean dining room which is now in use. Yet with all these improvements it is far from being sanitary and safe and it is impossible to make it so. The only remedy is a new building.

The milk room and utensils were found clean and in good condition. As reported last year, there is a scarcity of milch cows, 14 in number.

The mule, cow and hog lot adjoining the women's ward was at the time of our inspection in a most unsanitary condition.

Respectfully submitted,

(Signed) ROBT. A. MARSH, M. D.

At the time of my inspection there were 408 prisoners in the yard and 117 on the farms.

#### SANITARY INSPECTION OF THE CONFEDERATE SOLDIERS' HOME.

*To the Chairman and Members of the Executive Board of the  
South Carolina State Board of Health.*

Gentlemen: I made a sanitary inspection of the Confederate Soldiers' Home on December 21, being accompanied by Mr. E.



L. Filby, our Sanitary Engineer. We were carried over the entire plant by the Superintendent, Mr. Stewart, who seemed glad to tell us of the many improvements and of his expectations along this line.

On this day there were 71 veterans here, 11 of whom were in the hospital. They had had 21 deaths since January 1, 1923.

We found sanitary conditions exceptionally good. The rooms were clean and neat, with bedding in excellent condition; two veterans in each room with separate cots. All rooms are steam-heated and screened, and supplied with hot and cold water. Ventilation is good. A new annex to the hospital, of five rooms and a bath for the care of the insane, is quite an improvement and is now ready for occupancy.

A herd of five cows, four of which are milking, have been tuberculin tested. The supply of milk is ample for the veterans.

The only possible criticism of conditions on the premises is the hog lot, and at this time preparations are being made to move this over the brow of the hill near the woods.

Respectfully,

ROBT. A. MARSH, M. D.,

Chairman of Committee on Charitable and Penal Institutions.

#### SANITARY INSPECTION OF REFORMATORY FOR NEGRO BOYS, COLUMBIA, S. C., R. F. D.

*To the Chairman and Members of the Executive Committee of  
the South Carolina State Board of Health.*

Gentlemen: There were 168 inmates of the institution at the time of my inspection on December 21, and dinner for the boys was on the able. Flies were swarming in every direction, over the food and elsewhere. The dinner consisted of baked sweet potatoes, boiled mustard greens and black corn-bread and water. The floors and walls throughout the building were very clean, the floors having recently been scoured and the walls plastered and white-washed.

The sleeping quarters in this building are beyond description, and the over-crowded condition has been mentioned by different committees for years. The beds are most unsightly and filthy. The boys' clothing appeared to be clean. They are required to take

shower baths twice weekly and to change their clothing at these times.

The wooden building in the rear of the main building is a perfect fire trap. There is no way of escape should a fire occur as the only escape is locked and there is no possible way of getting out until the key is turned by the guard. The sewage disposal is the very worst possible.

The cow and mule barns are new and are much better than the provisions made for the unfortunate inmates of the institution. Eight cows, all tuberculin tested, supply the milk for the institution. A new cold storage and milk room, well screened, with cement floors, is a credit to this place.

The following suggestions are offered:

1. A better water supply and an elevated tank.
2. A toilet system on the yards. At this time there is none and a sewage disposal plant seems necessary.
3. A new and adequate building for school purposes, and a place of recreation for the boys during rainy weather. At this time there is no provision for this.
4. The hospital should be supplied with running water and toilet accommodations.

Respectfully submitted,

ROBT. A. MARSH, M. D.,

Chairman, Committee on Charitable and Penal Institutions.

SANITARY INSPECTION OF SOUTH CAROLINA  
INDUSTRIAL SCHOOL FOR WHITE GIRLS,  
COLUMBIA, S. C., R. F. D.

*To the Chairman and Members of the Executive Committee of  
the South Carolina State Board of Health.*

Gentlemen: On December 21, 1923, I made a careful inspection of this institution and am unable absolutely to criticise conditions in any way. To my mind it is a model institution and the girls there have a wonderful opportunity to learn all the arts of home making, as well as all other forms of work and industries. The place is clean and neat throughout.

A small dairy of five cows supplies 32 quarts of milk, giving each of the 57 girls two glasses daily.



20 girls are under venereal treatment. Many teeth are bad and many tonsils need removing.

The work of the place is done by the girls.

*Suggestions:*

That all girls be vaccinated against smallpox upon entrance, and given typhoid prophylaxis.

That a dentist be employed to attend to defective teeth and gums.

That a tonsillar and adenoid clinic be held and the throats be cleaned up.

A building for school purposes and a chapel are absolute necessities.

A concrete walk from one building to the other would aid much in keeping the premises clean and the girls' feet from the wet ground.

I think that Miss Burgess, the Superintendent, should be commended for the conditions at this institution.

Respectfully submitted,

ROBT. A. MARSH, M. D.,

Chairman of Committee on Penal and Charitable Institutions.

Chester, S. C., December 17, 1923.

The Executive Committee,  
State Board of Health:

I inspected the School for Feeble-minded on December 11, 1923. Dr. Webb made the rounds with me as Dr. Whitten was in Columbia on business. There were 205 inmates at the institution of varied ages and mental conditions.

There were very few cases of illness at the time of my inspection. Dr. Webb reported that there had been a few cases of mild influenza. There are two cases of tuberculosis, one apparently arrested and doing fine, the other an active case which is properly isolated and kept in a well ventilated shack. The death rate of the institution has been remarkably low. One of the needs at present is some ward where the ill cases can be properly isolated.

The sanitary condition in the two permanent buildings is fine. In fact, the conditions are good throughout, considering the character of the new buildings. The food supply and prepara-

tion seemed good. There is a little shortage of milk just at this time.

The idea of segregating according to age and mental condition in various buildings is good, but of course fireproof and steam-heated buildings are needed as soon as funds are available for construction.

The training given some of those of higher grade of mentality is very commendable and with ample facilities for training in the simple gainful vocations may make some of these self-supporting.

Respectfully submitted,  
(Signed) W. R. WALLACE.

Members of the Executive Committee,  
State Board of Health:

I inspected the State Prison Farms near Hagoods October 4, 1923. The sanitary conditions were fair at both farms, except screening was poor and there were many flies in kitchen and dining room, especially at farm No. 1. At farm No. 1 there was no screen at all at the front door, which opened almost immediately into the dining room. Also, at this farm there is some malaria, which is probably due to this defective screening. The screening at both farms should be thoroughly gone over before spring and quite a lot of it replaced with new.

The bedding was about in the condition of all prison beds that I have seen—very soiled, but this was near the end of the week and was at its worst. No vermin were seen.

The diet was ample and with some variety.

There were several sick prisoners at farm No. 1, one of whom was running high fever said to be malaria. The others did not seem to be much sick and had been so reported by the attending physician. At farm No. 2, there were two prisoners with very bad venereal sores, which were a menace to others, but the superintendent said that they would be transferred to Columbia immediately for diagnosis and treatment.

Neither of the superintendents knew whether the men had been vaccinated or had received the typhoid inoculations or not. I do not know what the regulations are but this seems very important where there are no means of isolating the sick patients.

Respectfully submitted,  
(Signed) W. R. WALLACE, M. D.



*To the Chairman and Members of the Executive Committee of  
The State Board of Health of South Carolina:*

Gentlemen: In connection with my report on the Penitentiary, I beg also to submit to you our findings at the South Carolina Industrial School for White Boys, at Florence, S. C., which was inspected by me on July 26, 1923. On this occasion we were accompanied again by Mr. Filby and he and I together made a very close examination into every detail connected with the sanitary conditions of the institution. I can't express to you my extreme delight at finding conditions so greatly changed for the better. It is wonderful what has been done there by the Superintendent with the appropriation made by the legislature last year. I think every Representative should visit this institution since the appropriation was made and see and know the benefits that have been had by the help that they have given it.

This year we found all of the dormitories, the beds and bedding, including the mattresses of which you have heard before, clean and neat and in first-class shape. Blankets, sheets and pillow-cases are more abundant, and the boys have more clothing than we have ever seen on our former visits.

I am unable to make any criticism of the sanitary conditions found in this institution. I only can commend Mr. Martin for the very wonderful changes and for the deep interest which he seems to have in the welfare of each one of his wards. I am sure that each boy finds a close friend in their Superintendent. I judge this by the cooperative spirit manifested in every department of the school.

We would call to your attention again the great need of a heating plant, a modern school building and a water supply.

At the time of our visit we found 164 boys of an average age of 15 years. 10 of these boys were committed for a definite time, and 154 committed for an indefinite period.

The Dairy is modern and very sanitary.

Respectfully submitted,

(Signed) ROBT. A. MARSH.

## REPORT ON EDUCATIONAL INSTITUTIONS.

Hartsville, S. C., December 15, 1923.

Your Committee on State Educational Institutions begs leave to submit the following report:

Winthrop College has been examined by the Committee and the recommendations of last year gone over again carefully and found to have been generally complied with. At this time we investigated the small epidemic of typhoid fever which occurred there in November, and found that it was handled with due promptness and care, and promptly stamped out. The source of infection of this little epidemic has not been definitely established, but it has been definitely established that it was from without the institution.

The Citadel and the South Carolina Medical College were inspected by your Committee and the reports of that inspection are attached hereto.

The inspections of the institutions at Cedar Spring, South Carolina, of De La Howe, of the University of South Carolina, of Clemson College and the State A & M College for negroes at Orangeburg were made by the Sanitary Engineer and the State Epidemiologist and their reports are herewith attached, and careful attention is invited to their several recommendations, all of which the Committee endorses.

Attention is called to the fact that the condition of Clemson College is excellent, that all recommendations contained in our last year's report have been complied with properly on the part of the authorities there, and the institution is in a very satisfactory condition from a sanitary and hygienic standpoint.

Respectfully submitted,

WILLIAM EGLESTON,  
C. C. GAMBRELL,  
WILLIAM LESTER,  
S. C. CALDER.

Hartsville, S. C., Sept. 21, 1923.

On the 21st of September I inspected the Citadel and the State Medical College at Charleston and found conditions as set forth herein.



The Citadel, in its new and up-to-date quarters, is without question ahead of anything of its kind in the State. Money seems to have been used to provide, for the first time in the State's educational building program, every needful thing almost for the proper education and training of the students. The things having to do with sanitation and hygiene have been especially well cared for, and it is only hoped that they will be kept in high state of efficiency as at present, and added to and amplified as needs arise.

The hospital building in every aspect is a gem, and surely there can be nothing more complete and satisfying in any State in the Union.

The one suggestion this Committee might make has to do with the screening of the barracks against flies and malarial or other mosquitoes. With no desire to question the difficulties which the climate offers against screens, and the constant care required to keep so many screens in good shape in a school of this sort, it is felt none-the-less that to be absolutely complete from a sanitary and health point of view that general screening of the barracks must sooner or later be done.

The State Medical College Buildings were inspected on this date also, and found to be in excellent condition. The session had not begun and the students were not at work, but it was seen that every advantage and accommodation were provided for the students, and all sanitary arrangements made for their health and safety. Even with the new quarters provided, there is none too much room for a student body as large as this school has and possibly at an early date room and money may be found for the building of a large, well-lighted ampitheatre to the rear of the old building. Its need must have been badly felt all the while.

Respectfully submitted,

(Signed) W. EGLESTON, Chairman.

*Dr. James A. Hayne, State Health Officer, and Member of the Executive Committee of the State Board of Health of South Carolina:*

Gentlemen: At the request of Dr. Wm. Egleston, Chairman of the Committee on the inspection of State Educational Insti-

tutions, I made a thorough inspection of Clemson College on the 24th of this month and beg to report the following findings:

With the Health Officer of this institution, Dr. George D. Heath, I made a thorough inspection of every department of this college, finding marked improvements in several departments and everything on the whole in a most satisfactory condition, for which the faculty and heads of all departments should be commended as having done practically their best in every way for the health and comfort of the student body. The health of this body, which I understand to be composed within the past year of about 1,100 students, has been remarkably good, no cases of sickness having occurred within the past year, except a few colds, sprains, and three or four fractures, with the exception of one case of pneumonia which occurred some months ago, and a case of typhoid fever, which is at present sick in the hospital. As was noted last year, the hospital is too small and inadequate for the purpose of the college but is kept in an excellent condition. I would again call attention, however, to an "open fireplace" in the operating room, which should be at once closed as it is, for obvious reasons, a menace. It is needless as the room is steam heated. The idea that the danger of this fireplace lies in the possibility of infectious material entering the room through the chimney and this fireplace opening seems not to have been grasped except by the surgeon in charge.

#### *Toilets:*

Relative to these, it is a very great satisfaction to report that the entire suggestions made by me last year to the faculty have been accepted, and there are now about completed very much enlarged toilet arrangements in the college buildings, in all of which the bathing equipments have been very much improved and the old and antiquated toilets in use for the past number of years ("Saddel and oval"), have been thoroughly abandoned and new crescent toilet seats adopted as standard for all toilets in use by the institution.

#### *Garbage Cans:*

Referred to in last year's report as standing in the open without covers have been done away with and all garbage cans are housed in concrete structures with tight fitting doors and covers



absolutely fireproof, and garbage is removed daily in covered cans to the final place of disposition.

#### *Barracks:*

Generally were in a cleanly condition but not very attractive so far as the hallways were concerned. My inspection was made toward the close of the day, however, and it seems that the students persistently and insistently litter these hallways with debris, mostly paper, which gives them an unattractive appearance.

#### *Class Rooms:*

It is pleasing to note that all conditions in these rooms which were desired improved have during the past year been given attention and are now in excellent condition throughout. The class rooms in which physics is taught was especially noticeable for immense improvements in these respects.

#### *Y. M. C. A. Building:*

Is in excellent condition, indicating care in its keeping. This includes all departments—living rooms, bed rooms, cafeteria, etc.

#### *Dairy Barns:*

Were in their usual excellent condition.

#### *Milk Room and Utensils:*

Very much improved and in very satisfactory condition in every way. It should be noted that the milk room has been increased in size at least 300% and improvements added, such as steam sterilizer, cooling tank, modern wash basins, etc. These additions and improvements are in process of accomplishment and will be completed by December 1, 1923.

#### *Hog Barns:*

Everything about these barns and premises was in excellent condition.

#### *Barber Shop:*

In excellent condition.

#### *Mess Hall:*

As usual, in splendid condition of cleanliness. Everything about this Hall seems to receive the greatest care, and everything

needed and desirable seem to be supplied for the comfort, convenience and health of the students.

*The Kitchen, Pantry, Commissary and Laundry:*

Are all in "spick and span" condition as reported last year, and are attractive in every way.

*The Hotel:*

Is in well kept condition and clean in every respect and in all departments. Stops about the doors, in some instances, were conspicuous by their absence and in others were not adequate for the the reasons for which they were desired. It is absolutely impossible to keep the kitchen free from flies on account of cracks in the floors, which vary from  $\frac{1}{2}$  in. to  $\frac{3}{4}$  in., rendering the screening of the kitchen practically of no value.

*The Veterinary Hospital:*

Is in excellent condition, the bakery and butcher shop being practically 100%.

*The Creamery:*

Has had proper screening placed and is in every respect in very excellent condition, protection against flies having been rendered as nearly perfect as possible.

Respectfully submitted,

A. H. HAYDEN, M. D.,  
Epidemiologist, State Board of Health.

Columbia, S. C., November 23, 1923

*Dr. James A. Hayne, State Health Officer, and Members of the Executive Committee of the State Board of Health of South Carolina:*

Gentlemen: In accordance with instruction from Dr. Wm. Egleston, Chairman of the Committee on the inspection of State Educational Institutions, I today visited the school for the Deaf and Blind at Cedar Springs, S. C., and made sanitary inspection, and beg to report as follows:

This institution cares for 305 pupils, 232 white and 73 colored; 100 blind, 205 deaf, a few of whom are also blind.



*Sickness:*

There has been practically no sickness in this institution, except a number of slight colds and indispositions of simple character lasting only a few hours.

*Hospital:*

A hospital is badly needed in this institution. It seems imperative that one should be at once supplied, for reasons which are apparent to everyone.

*Primary Building:*

The dining room, kitchen, store room, dormitories are all in excellent condition and attractively kept.

*Bakery:*

There is no bakery provided for this institution and the need of one seems not only desirable but imperative; if for no other reason, from an educational standpoint.

The dormitory for teachers and girls in excellent condition and well kept.

The administration building, which provides dormitories in one end of it, is attractive and well kept and cared for in every particular.

The dairy barn is exceedingly crowded but clean; needs very material enlargement and improving in every way. A herd of 10 cows in milking is entirely inadequate for the needs of the institution, only about 30 gallons being obtainable per day from the herd, while 60 or more gallons are needed to give the children the amount of milk which their age, etc., requires. Besides the need of more milk, the institution is unable to make any butter and is buying all of the butter needed at a cost very much in excess of that for which they could supply their own butter if they had a herd of cows sufficient for that purpose.

*Water:*

Water is derived from springs enclosed and properly cared for, has been tested three times during the past year and found to be o. k. This institution is very much in hopes of being able to connect with the city water supply within the next few months.

Fire protection is inadequate; in fact, they have none.

*Milk Room*:—None.

*Sterilizing Plant*:—None.

Both of the above should be supplied.

The colored department was all that could be desired and the children in this department are as well cared for as in any other.

Respectfully submitted,

A. H. HAYDEN, M. D.,  
Epidemiologist, State Board of Health.

### INSPECTION STATE COLLEGE AT ORANGEBURG.

Following instruction from the Executive Committee of the State Board of Health, I visited the State College at Orangeburg on December 13th and inspected the institution. Various members of the staff accompanied me about as the President was in Columbia. The following points were taken up.

#### *Water Supply:*

The college is served by the city of Orangeburg but owing to lack of sufficient pressure the college has to pick up the water by a centrifugal pump and elevate it to a 5,000 gallon elevated steel tower in order that the top stories of the buildings may be served. The Orangeburg water supply is from flowing artesian wells. It was stated that the college might seek its own wells in the future but this is not advised.

#### *Sewerage and Sewage Disposal:*

Each building is connected to the city sewer and flush closets of the vogel type are used. In Lowman Hall, the boys' dormitory, the entire arrangements are being torn up and newer fixtures installed. The toilet is located in the basement of the building. The floor is of concrete and the room quite large. No odor was noticed. The building is three stories high and the toilets located at one end. For the females there are two buildings, Manning Hall and Brabham Hall. In both these buildings the toilets are located at each end of the building between floors. In Brabham the equipment is as follows: for 106 girls 5 stools; 4 hand basins; 1 slop sink, 3 bath tubs. It was noted that the hand basins were all in two rooms. Each toilet room has one window which is screened. In Manning for 117 girls



some of the equipment noticed was—3 hand basins, 2 stools, a shower in one toilet and in another a stool, a tub, a sink and a hand basin. All toilets were very clean and free from odor. In White Hall, the instruction building, there are several small toilets. These were in excellent condition. There are no open privies on the college grounds—a remarkable condition. Wastes from the kitchen and laundry also enter the city sewer. There is no toilet at the dairy.

*Recommendation:*

It is suggested that at least one hand basin be provided in every toilet where there is a stool.

*Food and Food Handling:*

Food is given out from the commissary at the rear of the President's home to the matron in charge of dining room and kitchen. The commissary was clean, well ordered and full. Meats are largely bought on the "enough for one meal" plan so that no storage of fresh meat is made. Hogs are killed in the same manner. Bought meat is from the Chicago packers. The students are all fed in one large dining room which is about 120 x 42. The student body is about 470. All the serving of food is done by the boys. The girls keep the room clean. Table linen is changed twice a week. There are about 40 windows in this room and the floor is of wood. The tables were very neatly arranged and linen and utensils very clean. Dishes are washed by an electric washer in a pantry that adjoins the dining room. This pantry has a cement floor and is fully screened. A screen door opens into the dining room. Adjoining this room is a private kitchen for the teachers, and a small private dining room. The small kitchen was well kept and in order. Dishes are washed and dried by hand here. A small roller towel for the use of the cook was noticed but it was very clean. No notice of an inspection had been given. In the main kitchen for the college the cook had things in fair condition. His equipment consists of a double range, 2 zinc top tables, a metal sink and a baker out of commission. Three steam cookers are in use. The floor is of concrete and scrubbed every other day. Mice and roaches are still in evidence but a constant fight against them is kept up. A wooden storeroom adjoining the kitchen probably lets a lot in. The kitchen was quite hot, no method of removing the gases

after cooking being apparent except thru the vent thru the roof where the chimney goes thru. Garbage goes out every day to the hogs. A new screen is needed in the pantry and several fly swatters should be on hand to combat the flies which were quite numerous. The garbage wagon and loading platform need attention and it is suggested that galvanized cans with covers be used to haul the garbage in in place of the present wagon. Ice is obtained from the city. A small "cafeteria" was noticed on the grounds but they only sell soft drinks and sandwiches, all cooked food being cooked in the regular kitchen. This was not open at the time of inspection.

#### *Recommendation:*

It is suggested that a hood and an exhaust fan be provided over the range, the fan being located where the old chimney pipe went thru the wall. All screens should be gone over carefully and fixed where needed. Flyswatters should be part of the kitchen equipment in active use.

#### *Milk:*

The school has their own dairy and dairy barn. They have about 20 cows—Holstiens and Jerseys—all Tb. free. About 40 gallons per day are obtained, some of which is sold to sick people up town. The milking room is very clean and was in order, a cement floor and water under pressure allows it to be kept clean. The cooling, and bottling room is nearby and was in good condition except for flies. The screen door needs some repairs here. Milk is not pasteurized but simply cooled, clarified and bottled.

#### *Housing Conditions:*

At the boys building—Lowman Hall—overcrowding prevails. In some rooms that are 15 x 25 x 10 there are 5 and 7 boys. There are, however, 5 large windows and the door has a transom. Windows are not screened. In rooms about 14 x 14 there are 3 and 4 students, with two windows, and a transom over the door. There are 187 boys quartered in this building. Each room has steam heat from a central heating plant and electric light from the city or college plant. The college furnishes a bed and a mattress—all other appointments are furnished by the students. Inspection is every day and on Saturday a special visit is made. Once a month the mattresses are aired. The interior of the building is of wood and stairways the same. The



buildings are of brick with tile or metal roof. On each floor is a garbage can that is emptied twice a day. The dormitory is kept clean by students who are on duty for two weeks at a time. There are no drinking fountains in the building—the only drinking water being from the toilet in the basement or from bubblers in the courtyard. In Manning and Brabham Hall—girls dormitories—no overcrowding prevails. There are usually two in a room about 12 x 15—one double bed and a window. In some rooms there are 5 but these rooms are 24 x 15 x 10 and have 5 large windows. Drinking water is only available in the toilets or courtyards. The same rule regarding bedding is in force for the girls. All doors have transoms and none of the windows are screened except the toilet windows. All rooms were clean and in order. Bedding must be washed by the girls themselves or sent to the town laundry as the boys have to do. Electric light and steam heat are furnished.

*Recommendation:*

Another dormitory for men is badly needed. If possible it is suggested that drinking fountains or bubblers be installed in the halls of each building.

*Laundry:*

The only laundry the school has is the basement of a frame building where about 50 tubs are available for the girls to wash their clothing by hand. Hot water has to be heated in an old scalding vat and carried by hand to the tubs. The floor is of concrete and drains to the sewer. The clothes are dried out on the grass and on several lines. Boys have to send their laundry to town or home. Electric irons are available for ironing and also a stove for heating flat irons.

*Recommendation:*

Some sort of power driven machinery should be obtained to wash the linen of the school.

*Fire Protection:*

The school is well equipt against fire. There are mains and hydrants of the city about the campus. A riser pipe and hose are on each floor of each building. Chemical extinguishers are scattered about in handy points. The buildings have large

halls and fire escapes at four points in each hall. Fire drills are held at frequent intervals. At one point combustible material was found under the stairways—which are of wood—but this was to be moved at once. All the buildings are of brick construction with tile or metal roofs. There is no building over the kitchen.

*Hospital:*

The school has a small hospital—well equipt and in excellent cleanly condition but there are several windows that need screens and it was stated that these would be put in at once. All new pupils will be vaccinated at once.

*General:*

The school is in an excellent sanitary condition. A few minor corrections will help to eliminate the few points mentioned in this report.

Respectfully submitted.

E. L. FILBY.

Columbia, S. C., November 22, 1923.

*Dr. James A. Hayne, State Health Officer, and Members of the Executive Committee of the State Board of Health of South Carolina:*

Gentlemen: In accordance with request of Dr. William Egleston, Chairman of the Committee on inspection of State Educational Institutions, I made a thorough sanitary survey of De La Howe State Training School, in which are housed, cared for and trained 120 children—80 females and 40 males, white, and beg to report the following to be the conditions found:

*Sickness:*

During 1923 there have been no serious cases of sickness and none of the so-called diseases of childhood were present among the children of this institution, indispositions being confined to comparatively few slight colds and temporary indispositions of 24 to 48 hours duration only.

*Hospital:*

There is no hospital provided for this institution, which seems imperative. In the institution there are two rooms pro-



vided for isolating patients in case such needs arise. From every viewpoint it seems that hospital accommodations should at once be provided for this institution. One particular reason for immediate hospital accommodations being provided is the fact that should an outbreak of sickness through diseases infectious or contagious arise amongst the pupils, it is evident that without proper hospital accommodations each and every one of such diseases would immediately become epidemic in the school.

The buildings are thoroughly screened, with the exception of two windows in the basement and furnace room, which I was advised by the management would be immediately screened since their attention had been called to this necessity.

#### *Fire Escapes:*

There are no fire escapes to the building, but two so-called fire-proof towers with steel doors, stair-cases, etc., which in the mind of your inspector seems rather inadequate, and it is believed that two fire escapes, at least, on the outside of the building should be provided. In the old buildings particularly, in which 16 girls sleep in the second story, it would seem that a fire escape, at least fire escapes, are necessary to be at once provided.

The new or Executive Building is steam heated and seems to be adequately supplied for all purposes, while the old buildings are heated by old grate and open fire places.

#### *Water:*

Water is derived from bored wells, the last of which is 185 feet, which easily supplies the 10,000 gallon steel tank with all the water necessary at the present time. Attention is however called to the fact that no test as required by law has ever been made of this water supply furnished to the students.

#### *Sewerage System:*

Adequate systems of sewerage are supplied and in working order in all buildings.

#### *Toilets:*

The institution is supplied with flush toilets emptying into two septic tanks. There are however, on the premises two open

surface toilets which have been recommended abandoned and replaced by water and pit toilets, which your inspector has been assured will be done at the earliest moment.

*Vaccination:*

The children in this institution have all been successfully vaccinated against smallpox, but it was suggested that vaccination against typhoid fever would be a desirable undertaking which I understand the faculty will proceed to have done at once.

*Labor:*

This institution is in very serious need of one or more skilled mechanics and workmen, more especially a carpenter and a plumber, that the buildings, plumbing, etc., may be kept in order. Need of this has been very much felt during the past years by those responsible for the upkeep of this institution.

*Boys' Home:*

The walls need cleaning and a thorough white-washing or kalsomining; floors are badly in need of repairs, and it seems imperative that a new roof be put on this building in the very near future.

*Girls' House at old site:*

Badly in need of kalsomining, and the walls and floor in need of repair. A new roof is also needed on this building.

Septic tank at the old site of this institution is not in perfect working order. There is considerable surface oozing and I should say there is need of inspection, at least, by our Sanitary Engineer. In one respect, at least, this tank is improperly constructed. No trap door for the purpose of inspection and cleaning of the tank is provided.

Amusements are much needed in this institution, both for the entertainment and education of these children and it is very desirable that a moving picture machine, or some other form of entertainment, should be provided. These children are too far removed from any town to be entertained in this manner, and they are absolutely with any means of entertainment whatever.



*Dairy Barn:*

There is practically no dairy barn, and there are not a sufficient number of cows possessed by this institution to furnish milk for the institution. It seems that the need of a modern barn, large enough to house at least double the number of cows the institution now owns, is imperative. There is also no milk room for the care and handling of milk from the few cows the institution now owns, nor is there any building adequate for the proper storage of food for these animals.

*Mosquitoes:*

Attention was called to the accumulation of tin cans, etc. on a portion of the grounds in proximity to the building, which furnished admirable breeding places for mosquitoes. The faculty were advised of this fact and requested to see that they were removed and proper disposition made of them.

*Dormitories:*

The dormitories were all clean and in well-kept condition.

Class rooms, on both first and second floors of building, are not provided with fire escapes, which are very much needed.

Kitchen and dining room were both in excellent condition—clean and well-kept.

Respectfully submitted,

A. H. HAYDEN, M. D,  
Epidemiologist, State Board of Health.

*Dr. James A. Hayne, State Health Officer, and Members of the Executive Committee of the State Board of Health of South Carolina:*

Gentlemen: Acting in accordance with request from Dr. Wm. Egleston, Chairman of the Committee on the inspection of State Educational Institutions, I have this day, November 27, 1923, visited and made a thorough inspection of the grounds, buildings, etc., of the University of South Carolina. While there have been very great improvements made in some buildings, portions of the grounds, etc., the general conditions of more than one building, in fact all except the newly constructed dormitories, are wretched indeed, some of the old wooden houses alone being in such a condition of decay and unrepair as to make living conditions in them not only unsightly but extremely insani-

tary. These conditions, I am advised, are due to the fact that for years past the appropriations absolutely necessary for the care and preservation of these buildings have not been made by the General Assembly, and on more than one building at present the question of repair and improvement of floor, walls, ceilings and roofs in some instances is now a question of salvage. In the DeSaussure building, one of the oldest, the hall floors have been improved through repair and modern toilets and bathing arrangements added, both of which are entirely inadequate to meet the needs of the number of students housed therein.

*President's Residence:*

The President's residence on the campus is in a condition which is wretched indeed and does not approach even a residence below what mediocre should be. Space for class rooms and departments is so generally scarce on the campus that this building has been turned over for such use and is occupied as follows: The first floor is occupied by students, publications department, second floor by the Extension Department, and the third floor is used for the alumni association and rooms for the school journal. The building throughout is in a state of decay and is really unfit for the use to which it is devoted. While the entire interior, as well as the roof, is in need of very extensive repairs. The building is also, as are many others on the campus, in need of heating appliances, the third floor of this building having no provision whatever for heating and those occupying this floor are without heat during the coldest weather.

*Hospital:*

Portions of this building have been in bad need of repairs but have recently been repaired, painted, and generally improved in this respect.

A store room is badly needed as there is no place to keep supplies. Kitchen and dining room are in A-1 condition, remarkably clean and attractive looking.

An addition to this building is very badly needed for the accommodation of female students who are attending the college in large numbers.

It seems that this building should be at once connected with a steam plant as during a large portion of the night the build-



ing is practically without heat, due to the fact that there are no servants present to keep the fires going to heat the building.

The number of bed patients in the hospital since January 1, have been 140. Of this number, 90 have been cases of dengue, 1 of dysentery, 3 of appendicitis, two of which have been operated on, 3 skin disease, 8 of tonsilitis, 1 of malaria, 1 of diarrhoea, 7 of fever. Injuries from athletic indulgence, 22, (This number is included in the 140 bed cases). Office calls, 1340. No contagious or infectious diseases amongst the students during the year.

#### *Chapel:*

The University is greatly in need of a chapel building. The room at present used for chapel purposes has a seating capacity of only 400 and is crowded to the limit. Considerably more than half of the student body must be excused from attending chapel services for want of space to accommodate them.

#### *Dormitories:*

With the exception of the new building, the dormitories are all more or less out of repair and without any conveniences whatever. The present capacity of these dormitories is intended to provide for only 280 students but have crowded into them at the present time 476, which is insanitary in the extreme. The new dormitory now in process of construction is intended to accommodate 96 students, but the authorities of the University inform me that they will be forced to place three instead of two students in each room at least. At that, accommodations will be adequate only for a little less than 400 students while the expected increase in the next few months is expected to bring the students resident on the campus up to a number approximating, if not exceeding, 600. There are at present 875 students, counting resident and day scholars, in the University while the body is expected to number at least 1,000 by the end of the year, and probably considerably more.

Among the old dormitories without steam heat is Pinckney, Legare, Elliott and Harper. In these buildings students are forced to lug coal even to the third floor, if they can afford to buy it, and keep it in boxes and bins in their sleeping apartments. It is very desirable that all of the dormitories in the University be furnished with steam heat.

In a great number of rooms in the students' dormitories they are so crowded that they have actually, not in several but in the majority of rooms, strapped iron beds one on top of the other and sleep in double deckers, although the beds were not originally intended to be used in this manner.

*Store Room:*

A large store room is badly needed by the University as they have no provisions, nor have they ever had any provision for storing any material whatever on the grounds. Considerable floor space in one at least of the dormitories is taken up due to the fact that storage space had to be found for cots and various article of furniture called into use several times during each year for the accommodation of visiting students, athletes, etc., upon occasions of public interest. Recently the college canteen has been forced to move out of their quarters in order to furnish storage for these cots, etc., and they are now cramped, occupying space entirely inadequate for their business and very much handicapped in the conduct of the same.

The dormitories of the University are not kept, nor is it possible to keep them clean and sanitary as they should be, due to the fact that the appropriation for this purpose has been entirely inadequate for the furnishing of a sufficient number of janitors. As late as 2 p. m. on the day of my inspection, probably not half of the halls or the students' rooms in this dormitory had been swept or given any attention whatever, while the janitors in charge had been busy and on a rush in their work of cleaning since 7:30 a. m. I am informed by the President of the University that a sum equal to \$4,000 or \$5,000 has been lacking during the past year with which to hire a sufficient number of janitors for this work.

*The Y. M. C. A. Building:*

While not modern, is comfortable and well-kept. This building is in great need of proper bath and toilet facilities, there being no shower baths and not even hot water supplied in the laboratories. There is no means whatever of heating this bath room.



*Gymnastics:*

The boiler capacity is entirely inadequate for the needs of the gym. Another boiler at least of the capacity of one in present use is imperative to supply the needs of the students. In some portions of this building improvement is noted in the construction of cement floors, taking the place of the old dilapidated wooden floors. The gym room is greatly in need of repairs and considerable plastering as the plastering is in danger of falling at almost any moment. The acoustic properties of this room are so wretched and echoes following speech so prolonged and loud as to make it almost impossible for an instructor to make himself heard by the students. There are no shower bath or toilet arrangements in this building for female students. Additions and enlarging of this room for their needs, or the building of a separate room for young ladies of this institution, is imperative. In short, the capacity of this building should be doubled in every particular. In the gym, is also in need of galleries for the accommodation of spectators when exhibitions are given.

Class Rooms are insufficient for the need of the University. In some of those even that they have in use at present the classes are so overcrowded that numbers of students are forced to stand in the class rooms during lectures and recitations. Also, attention is called to the fact that here, as at a number of other State institutions, there is lack of screens in both dormitories and recitation rooms, which should have been in place from the earliest use of these apartments, as all school buildings and all boarding houses of any size are required to be screened under the law, the dormitories standing to these students in the same light as large boarding houses or hotels stand to the general public.

I would call special attention to the wretched condition of the entire buildings occupied by the professors, as follows: Drs. Burney, Wauchope, Davis, McCutcheon, Rucker and Moore. In some of these buildings the floors sag several inches when walked over.

Respectfully, submitted,

A. H. HAYDEN, M. D.

Epidemiologist, State Board of Health.

## SANITARY INSPECTION DE LA HOWE INSTITUTE.

Following directions from the Executive Committee of the State Board of Health, I visited De La Howe Institute at Willington, S. C. on December 5th, 1923. Owing to the illness of Mr. Branch, the superintendent—the inspection was made accompanied by Mr. Carweil, the farmer. The institution is located about 4 miles from Willington, S. C. a small station on the C. and W. C. R. R. in McCormick County. This institution has very neary 2000 acres of land but the buildings themselves are located at the very edge of the land making the cultivation of certain portions, difficult. The institution is not under the control of the State Board of Public Welfare but is an educational institution with its own board of supervisors or regents. The institution itself may be divided into two groups of buildings, the old and the new. The following items were covered:

### *Water Supply:*

At the old group the water is obtained by a motor (gas engine) driven pump which takes water from a 60 ft. dug well located at one end of the new laundry building. This well at the time of inspection was open and a lost bucket was being fished out. The well is lined with a cement lining and has a brick and wood top. Water is pumped to a small wooden tank elevated by a pipe constructed tower located close by. From here it is piped by gravity to the superintendent's home and the two cottages adjoining; also the laundry. I was assured by the farmer that a concrete top would be placed over the well when the pump was finally set and that this would be done very shortly. At the new building the water is derived from a 185 ft. well. This well is cased and an engine driven deep well pump delivers the water into a 10,000 gallon elevated steel tower. The engine is a 15 H. P. gas engine and pulls the well and light plant. The well is located to one side of the new building. Water is piped thruout the new building.

### *Recommendations:*

The need of duplicate wells and pumps and motor power is very apparent. At the old group—if the engine breaks—the water supply is soon exhausted and the same is true at the new building. The 10,000 gallon tower is far too small, at least 50,-



000 gallons should be provided as this would allow time for the break down of pump or motor, to be repaired. Both institutions or groups could well be served from the new building provided there were at this building two wells with duplicate pumps and motor power. The water could be piped from the new building to the old group. The new building well and power plant need housing. The old dug well should be fixed up as soon as possible.

#### *Sewerage and Sewage Disposal:*

Both groups are equipt with water flush closets, etc. with final disposal by septic tanks. At the old group—Mrs. Martin's cottage—there is for 20 girls and three officers only one stool and one bath tub. No hot water is available except by heating on the stove and carrying. The stool is located on the downstairs porch and the bath is behind a partition in the upstairs hall. There is no way to heat this hall. At the other cottage—Mrs. Hughes—for boys there are the same fixtures but they are not connected to the water supply or sewerage system. The farm boys stay here. They have an old fashioned open back privy located a short distance from the house. The superintendents home was not inspected. At the new building, well designed toilets are found. This building is modern and well equipt. For 38 boys there are two showers, one tub, 3 toilets, 2 hand basins. The floor is of terrazo construction and is kept clean by two boys who are detailed for this work. Each boy can bathe whenever he desires and all must have one bath a week. For 46 girls there are 2 stools, 1 shower, a tub and two hand basins. In the boys toilets some odor was noticed. This probably could have been obviated by the installation of a urinal for the boys. In the basement is one stool off the furnace room but this is out of commission. The door to this room should be put back into place and nailed up. Disposal of the sewage is by septic tanks and sub-surface tile drainage. At the old group the soil is too tight to permit the absorption of the liquid and the tile lines should be taken up, relaid on a flat grade and extended. At the new building the septic tank is not in evidence and must be working satisfactorily as it has given no trouble. the old group septic tank is just about large enough but the tile lines are not laid correctly or extended far enough.

### *Recommendations:*

It is recommended that the tile lines of the old group septic tank be relaid and extended. The boys' cottage should be hooked up at once to the water and sewerage systems or the privy properly constructed as a pit type privy. If possible at the new building a urinal should be installed for the boys and an additional stool for the girls. Hot water should be provided for the cottages at the old group—this could be done by connecting the boiler in the laundry room with the cottages or connection of the hot water tank in Mrs. Martin's kitchen with the stove.

### *Milk:*

The school has their own dairy herd. They have 14 milking cows and 5 heifers and a bull. All are Jerseys and have passed several tuberculin tests. It was stated that the herd would be accredited next spring. About 12 gallons a day are obtained. Milking is done at morning and evening by two of the larger boys. The cow barn is an old cotton gin built prior to the Civil War. It is of hand hewn timber—without floor. Electric light is obtained from the plant near the superintendent's home. The dairy barn is located about 400 feet down hill from the superintendent's home. By opening up some ditches near the barn good drainage can be obtained about the barn. A small 40 ton silo adjoins the barn. The cows are under the direction of the farmer, Mr. Carweil, a Clemson graduate. Only about 20 acres of pasture are available as the barn is right on the edge of the school property.

### *Recommendations:*

A new cow barn is badly needed. The purchase of an adjacent field will allow more pasture.

### *Food and Food Handling:*

At the old group the food for the students is prepared in the kitchen of Mrs. Martin's cottage. This room is very small—there are holes in the walls and floor, plaster is falling off and paint almost gone. The stove is an old one but a good one mounted on a few pieces of old brick. A hot water tank stands adjacent but not connected to the stove. Eight girls do all the cooking, wash all the dishes, go to school, scrub the floors every other day and in short do all the work. The oldest of these



girls is 16. Two wooden tables are provided. The room is about 15 x 20 and is screened but the presence of holes in the floor, walls and an old open chimney allow many flies to get in. The stove is fired by wood. Food supplies are given out by the superintendent every 10 days and kept in a small supply room adjacent to the kitchen. This room is not even ceiled. Mice are plentiful but 6 cats keep them busy. Fresh milk is given now once a day and in the summer three times a day. Food consists largely of home raised products—all the common South Carolina vegetables being served and pork all thru the hog killing season. During the summer beef is served from the bull calves and from a local farmer who kills his own meats and delivers them. Meat is given about once a day. The school has about 200 chickens, mostly laying hens and pullets. A small screened porch provides a place for the milk utensils to be stored. No ice is used at the present time. The dining room at Mrs. Martin's cottage was well kept and in fine clean condition. The tables were neatly set and linen clean. 29 persons eat here and 5 girls serve them. The room is about 15 x 30 x 10 and has 4 doors and two windows. Windows, doors, etc., are screened but the poor construction of the building allows flies to enter and there were plenty in the dining room. A coal stove supplies the heat in winter. An ice box of 300 lbs. capacity is in the dining room but no ice is now being used. Ice has to be hauled from Abbeville about 16 miles thru the country in the summer time. At the new building there is a large central dining room fully capable of taking care of double the present number of students. The kitchen adjoins and in comparison to the dining room is very small. It was probably designed not as the kitchen but a serving pantry. This kitchen is run entirely by the girls with the aid of one negress. An officer supervises the work but she was leaving on the day of inspection. 9 girls were on duty the day of inspection. The equipment consists of a large range, a baker, a steam pressure cooker, 3 metal sinks, a hot water boiler, a potato peeler, etc. The sink drains are very poor as the pipe line from the sink instead of having a continuous slope has an abrupt rise about 15 feet from the sink. This is continuously stopping up and this rise must be eliminated for the sinks to ever work correctly. No strainer is provided for the sinks. Dishes are washed and dried by hand. The steam

cookers, etc. are not in use for when the stove is in service all the cooking is done on or in it.

In the dining room there is a large coffee urn not in service. All the windows and doors are screened. Metal topped tables are used in the dining room. On the day of inspection the hot water was not running in the kitchen. Butter is given once a day.

#### *Recommendations:*

It is recommended that the girls detailed to kitchen and dining room work be provided with fly swatters and use them while the food is being cooked. The old group kitchen needs entire reworking and ceiling. It is suggested that this kitchen be abandoned and the entire force fed over at the new building if some sort of transportation in wet weather could be provided. A screen door between the dining room and the kitchen is needed over at the new building. An exhaust fan could well be used in this kitchen to exhaust the cooking odors. The sink drains should be taken out and relaid at once. Hot water connections should be constructed. At the old group hot water could well be obtained from the tank adjacent to the stove or from the laundry heater if they were connected up. Grease traps should be provided outside each kitchen sink line in order that this grease might be kept out of the septic tanks.

#### *Construction of Buildings:*

At the old group—Mrs. Martin's cottage is a two story cottage built of brick with wood interior. A large porch is provided and the kitchen-dining room extends as a wing from the rear of the cottage. The rooms are about 14 x 16 x 10 and usually have four girls to the room. There are two screened windows. In one room there were three beds—two single and a double bed. Each bed has 2 sheets—a pillow and slip and all the blankets they want. The mattress is of cotton—beds of iron. An electric light is in each room and the room is heated by an open fire place. In the closets there are no shelves and the roof leaks. Last winter the roof caught fire twice. There are four rooms up stairs. At Mrs. Hughes'—a square brick building—one story in height—two double beds are provided for the boys. Two rooms are provided for as an infirmary with two beds apiece. The windows are screened and



fire place supplies the heat. In another room for the boys there are two double beds and a single for 5 boys in a room about 15 x 15. At the new building dormitory rooms are provided. In one room about 24 x 35 x 12 there are 14 beds. Six windows are provided for ventilation and a transom over the door allows cross circulation into the hall. Floors are of wood. All the windows are screened. With fourteen beds this allows 60 sq. ft. of floor space per bed and 720 cu. ft. of air per person. In another room 24 x 28 there are 12 students. Bedding is the same as in the other building. In another room 21 x 34 there are 11 beds and 8 windows. Girls are kept upstairs and boys on the first floor. In one of the girls' rooms there are 9 beds for 2 windows but the room is 21 x 28 x 12. In another there are 11—for 7 windows and a room 21 x 33 x 12. This room could well handle 17 girls. There are no closets for the girls so wooden cabinets are ready to be installed so that each girl will have some small place to keep her private clothing, etc. The kitchen girls' room is 34 x 22 x 12 and about 15 girls stay here. In one of the rooms supposed to be a play room there are 10 girls. This room is about 30 x 30. Each pupil has their own tooth brush. The school furnishes all the clothing and food. Four school rooms are available for instruction in this new building. Heat is from a boiler in the basement—an Ideal steam boiler. A boy runs the boiler. The new building is not fully completed about one third still remains unconstructed. The building is a granite veneer construction—wood floor and metal ceilings. Offices and reception room and living quarters for the officers are on the first floor. The superintendent lives in his cottage at the main (old) group.

#### *Recommendations:*

It is recommended that the old group buildings be gutted and rebuilt with modern interiors. It is suggested that the girls could be put more in a dormitory thus throwing open the play room for play as there is now no place for them to meet in wet weather.

#### *Fire Protection:*

At the old group there is none. Fire extinguishers—chemical have been ordered and will be placed about the buildings. The main fire fighting arrangement is now a bucket brigade. With

wood interiors and wood roof—a fire might easily get away but with these buildings the loss would undoubtedly be confined to the buildings as the occupants could get out on the roof of the porches or thru the windows on the ground floor. At the new building there are two specially constructed fire-resistant towers equipt with steel doors, metal stairways with "Terrazo" type floor. Fire drills are held at infrequent intervals and never held after school hours. Each child has to form outside the building and be counted before dismissal so as to check up on the occupants of the building. Chemical extinguishers will be provided. The metal ceilings are an aid in fire prevention. No stoves are used as the steam heat is available. The kitchen is at the end of the central wing and remote from the dormitory or school rooms. Electric wiring is modern. Hose and riser pipe are available.

*Recommendations:*

It is recommended that drills be held at frequent intervals and once in a while after the institution has turned in for the night. A larger water tower at the new building would provide more protection from property destruction.

*Odd Notes:*

A refrigerating plant should be secured to eliminate the long haul and waste of ice. It is suggested that the one at Clemson College Dairy Building where the milk is pasteurized could be secured as it is not in service. Duplicate units of power are needed to secure uninterrupted water and light. The new building has a place for a moving picture machine but no machine. A potato storage house is needed to save part of the farm products. The management is doing excellently with the equipment at hand and it is urged that the new building be completed and the old buildings remodeled into quarters for help. Appreciation is expressed to Mr. Branch for his courtesy in the matter of transporting the writer.

Respectfully submitted,

E. L. FILBY.



# ANNUAL REPORT DEPARTMENT OF MALARIA CONTROL, SOUTH CAROLINA STATE BOARD OF HEALTH.

1923.

December 15, 1923.

For three years most of our activities have been directed towards the control of malaria in small towns, with gratifying results. The more difficult problem of rural malaria control is still largely unsolved in South Carolina as it is in the other states which have a malaria problem. Because of this, we have endeavored during the year to discover the best method of attacking the rural malaria problem without discontinuing our efforts to free the smaller towns of malaria. On this account considerable space is devoted in this year's report to the measures employed in rural malaria control work; much of it in co-operation with the Department of Rural Sanitation.

## RURAL MALARIA CONTROL.

Ten of the forty-five counties of the state have full time county health officers. They are, Greenville, Dillon, Cherokee, Anderson, Fairfield, Darlington, Aiken, Newberry, Orangeburg and Charleston. In the other thirty-five counties, efforts to establish county health organizations have hitherto been unsuccessful, or the organizations for one reason or another have been discontinued. In the table below are indicated the counties that have a malaria problem and the counties that have a county health organization.

### MALARIA DEATHS PER 100,000 BY COUNTIES— 1916-1922 INCLUSIVE.

Rank	County	Deaths per 100,000	Rank	County	Deaths per 100,000
1.	Oconee .....	.46	8.	Greenwood ....	2.38
2.	Spartanburg ....	1.06	9.	Anderson* ....	2.43
3.	Greenville* ....	1.16	10.	Union .....	2.8
4.	Abbeville .....	1.64	11.	Cherokee* .....	3.0
5.	Laurens .....	1.9	12.	Dillon* .....	3.36
6.	Saluda .....	1.9	13.	Chester .....	4.18
7.	Chesterfield ....	2.24	14.	Pickens .....	4.19

		Deaths per			Deaths per
Rank	County	100,000	Rank	County	100,000
15.	Edgefield .....	5.98	31.	Marion .....	21.6
16.	Lexington .....	5.4	32.	Dorchester .....	21.1
17.	McCormick ....	7.74	33.	Sumter .....	23.3
18.	Fairfield* .....	7.9	34.	Clarendon .....	23.4
19.	Darlington* ....	9.5	35.	Williamsburg ..	25.9
20.	York .....	9.9	36.	Bamberg .....	31.4
21.	Lee .....	10.2	37.	Orangeburg* ..	32.6
22.	Kershaw .....	11.7	38.	Charleston* ....	33.8
23.	Lancaster .....	12.9	39.	Berkeley .....	36.2
24.	Richland .....	13.4	40.	Allendale .....	40.0
25.	Aiken* .....	13.8	41.	Beaufort .....	41.1
26.	Horry .....	14.7	42.	Jasper .....	42.2
27.	Newberry* ....	17.4	43.	Colleton .....	55.2
28.	Florence .....	17.8	44.	Georgetown** ..	59.4
29.	Barnwell .....	18.0	45.	Calhoun .....	59.9
30.	Marlboro .....	18.5	46.	Hampton .....	63.5

\*Counties have a county health organization.

\*\*Experimental malaria unit.

In only two of these counties, Orangeburg and Charleston, can malaria be said to be a health problem of first importance. In four of the remaining counties, Aiken, Darlington, Newberry and Fairfield, there are sections, generally along river valleys where malaria is prevalent, but a comparatively small proportion of the population of the county is involved. In the other four counties, Anderson, Dillon, Cherokee and Greenville, malaria constitutes such a small part of the health problem that little interest in it can be aroused. In counties where malaria is a problem there is often encountered a desire to minimize its seriousness, and a feeling that it is an unwise policy to attract public attention to efforts directed to the solution of the problem for fear that the advertising the community will get will redound to its disadvantage.

In Charleston County, the most malarious of the counties having a health officer, a great deal of educational work has been done. Dr. Carter's primer has been studied in the county schools, prizes have been distributed to the pupils writing the best essay on the subject of malaria and the habits of malaria mosquitoes.



Screening has been urged consistently and many homes, particularly in the suburban sections around Charleston, and many of the better homes in the county have been screened.

Much drainage work has been done in the county in the past three years. It is true that most of it was probably inspired because of the development of the trucking industry in the county, but some of it was extended merely to improve health conditions. The homes of S. A. L. employees, in the county, particularly in isolated locations such as at bridge tenders, posts, etc., have been screened. In addition to that the S. A. L. Railroad has drained or filled borrow pits along its right of way, and is at present engaged in malaria control measures intended to benefit its employees primarily, by expending many thousands of dollars. Its policy in this respect is in advance of that of some of the larger railroad systems operating in the state who have no forward looking policy with reference to malaria control. The Seaboard recognizes that by increasing the efficiency of its employees it reduces its operating expenses which really amounts to the same thing as increasing its earnings. This is the motive that inspires much of the welfare work of well managed corporations, and the cause of better health has benefitted by it.

Posters describing the standard treatment for malaria have been generously distributed by the county health officer. The railroads have posted these standard treatment notices in all of their railroad stations, even in the open waiting sheds in the rural sections of the county.

Mosquito control work has been done at the towns and resort places in the county, principally at Mt. Pleasant, Sullivan's Island, Folly Beach and Isle of Palms.

Some of the large planters on James Island and Edisto Island have cleaned up the worst breeding places on their plantations and are showing an interest in screening and the use of creosote as a repellent. They, like the corporations, are realizing the importance of keeping their labor in good health and as efficient as possible. Moving pictures were shown at schools and churches throughout the county in co-operation with the Department of County Health Work.

In Orangeburg County the health officer has been handicapped for lack of funds but he has rendered assistance by posting

standard treatment placards all over the county, and in stimulating the taking up of control work at Branchville. The hardware stores have been induced to carry only 16 mesh screening or finer. Moving pictures shown at six places.

In Darlington County standard treatment placards were posted and literature distributed. A special effort was made by the health officer to correct the roadside borrow pits throughout the county. Malaria clinics were held, blood examinations were made and free quinine administered. Moving pictures shown at 12 places.

In Newberry County the health officer required the abatement of breeding places in mill villages, posted standard treatment placards and held moving picture shows at 10 places. An important breeding area was corrected by drainage operations.

In Fairfield County the malaria problem is severest on the eastern border along Wateree River and on the western border along Broad River. These sections are largely occupied by negroes. Standard treatment placards were posted in these sections, moving pictures shown and lectures given at 19 places. An increase in quinine sales reported from druggists. A mosquito control program was carried out in the town of Winnsboro, the county seat, during the summer, inspired by the success achieved at other towns in the state along these lines.

In Aiken County, operating for the first time this year, the health officer devoted the early part of the summer to getting his organization started. He required the cleaning of a number of ponds in Horse Creek Valley and their stocking with minnows, posted standard treatment placards all over the county, held moving picture shows and lectures at 13 places. He assisted Mr. E. H. Gage, Sanitary Engineer, United States Public Health Service, in making a preliminary survey of malaria at a number of impounded water projects in the county. It is planned that Mr. Gage shall take up these studies again next year. In Anderson and Dillon the county health officer was established in the early part of the summer. Placards were posted and moving picture shows given in 11 and 18 places respectively.

Analysis of the malaria deaths reported by physicians in South Carolina last year shows that only 78 cases, comprising 32 per cent of the total for the state occurred in the counties having regular full time county health officers. Sixty-eight per cent



of the malaria deaths occurred in counties having no health organization at all. The big problem therefore is to get malaria control information to the people in the counties having no health organization. To accomplish this, it is first necessary to set up some kind of organization in those counties where efforts in the past have been unsuccessful in establishing regular county health organizations. To determine how this can best be done, an experiment is being conducted by the Department of Malaria Control, assisted by the International Health Board and Georgetown County. The county organization was established solely by the Department of Malaria Control working in co-operation with the Chamber of Commerce and the county delegation. The County Delegation's appropriation of funds was approved by the Legislature in March, and Mr. Lindsley Arthur was engaged as County Malaria Agent. Since much of his work is necessarily educational he began by conducting classes in the sixth and seventh grades in the county schools. Each class was regularly visited; the teacher permitting Mr. Arthur to conduct the recitation himself. Occasional field studies were conducted. Much interest was shown. At the close of the school term an examination was conducted by Mr. Arthur in each class. Some very good papers resulted.

In the early summer efforts were made to interest plantation owners in quinine prophylaxis for their tenants. Newspaper articles were prepared for the two county papers stressing the importance of screening, drainage, quinine prophylaxis, fish control, the use of paris green and creosote. Several planters provided free quinine for their tenants; others creosoted tenant houses; others were induced to do drainage work. Quinine prophylaxis was also carried out at two turpentine camps and several lumber camps in Santee Swamp.

House to house censuses were conducted in three rural sections of the county in order to have figures to show the need for carrying on malaria control activities. It was necessary to do this because some of the county leaders were not convinced of the necessity of doing malaria control work and thought that the county had been given an undeserved reputation for malaria prevalence. This census occupied much time and disclosed a prevalence as determined by case histories of from 40 to 87 per cent. Mr. Arthur explained the standard treatment

and prophylactic treatment to the persons, at the same time that he made the canvass of case histories. This consumed much of his time.

Much ignorance with reference to the spread of malaria was encountered in the rural districts and some of it dissipated. Lectures were given in negro churches, lodge rooms, and school houses. Moving picture films were shown and talks made during the pictures explaining it.

The County Malaria Agent was requested to give advice with reference to the malaria problem at Georgetown, where there are many old rice fields. These fields were studied, a census made of a portion of the town and plans are under way for controlling breeding in the old rice fields.

Catches were made in bed rooms and stables to ascertain the prevalence of various species of Anopheles.

The matter of eliminating roadside borrow pits was taken up with the Highway Department.

Screening was encouraged and hardware stores' stock were inspected to ascertain the size of mesh. During the summer the hardware stores reported sales of screening material, used largely in the environs of Georgetown were three times as great as in former years.

Arrangements were made with a local druggist who put up quinine in standard treatment quantities at cost, or at a very slight advance over the cost price. The sales of quinine are reported to have more than doubled during the year.

The county was thoroughly placarded with standard treatment posters. The railroad posted all its stations throughout the county and screened all railroad employee's homes.

The citizens in the county appear to be getting a clearer idea of the malaria situation and begin to realize that by their own efforts malaria can be greatly reduced and in many cases prevented.

As a result of state wide activities many farmers, planters, lumbermen and others are carrying out malaria control measures. Many of these do not come to our attention. Among those that have been called to our attention are a project in Horry County where a farmer drained the seepage areas at the heads of salt water bights and indentations on a tract of 1200 acres of land at



an expenditure of approximately \$400; digging nearly fifteen miles of ditches.

A lumber concern in Berkeley County spent \$1500 draining a site for its mill laborers, screened every house both for white and colored persons, posted standard treatment placards in the saw mill camp and in the logging camp in the woods, and provides free quinine to any of its employees who desire it, as a result of investigations made and advice given by this department.

Another concern interested in developing truck lands in Berkeley County and who constructed eight miles of large outlet drainage ditches and approximately thirty miles of lateral drains and ditches, screened all its houses, posted standard treatment placards in the neighboring settlement, and pays a man to inspect, oil and clean the lateral ditches on the tract.

A lumberman in Hampton County screened all the shacks in the logging camp, posted placards, distributed quinine, and *saw to it that a copy of Dr. Carter's primer on, "What the farmer can do to prevent malaria," was put into every rural mail box on the rural delivery routes.*

A large lumber company in Colleton County screened all the houses occupied by its employees.

Because of the fact that county health organizations do not exist in the most malarious counties, efforts are being directed to build up some kind of organization which will function effectively and economically and which can be developed into a regular county health unit. The work in Georgetown County is intended to disclose what kind of an organization is required. One essential is that it must be inexpensive. In the largest county in the state where the malaria problem is of first importance to meet the county's share of a \$3000 budget would involve a 5 percent increase in the tax levy. The county authorities will not make such an increase unless public sentiment very generally supports it. With a backward and uneducated class numerous in the county, much preliminary work must be done.

An effort is now being made to collect data with reference to malaria prevalence through the rural schools. The figures obtained in this way will be used to show to the people in the county, particularly to the leaders, the great need for putting malaria control measures into effect. A copy of the census card is shown

on the enclosed sheet. Arrangements have been perfected with the United States Public Health Service, whereby the findings disclosed by this census are to be checked by blood and spleen examinations of some of the school children.

**MALARIA CENSUS CARD FOR RURAL SCHOOLS—  
SOUTH CAROLINA STATE BOARD OF HEALTH.**

*To the teacher:*

Please send one of these cards by a pupil to each family represented in your school.

\_\_\_\_\_ School \_\_\_\_\_ County  
\_\_\_\_\_ Teacher \_\_\_\_\_ Date

Name of head of family \_\_\_\_\_ Number in family \_\_\_\_\_  
\_\_\_\_\_ How many members of family had malaria this year? \_\_\_\_\_ How many last year? \_\_\_\_\_ How long has family lived on this place? \_\_\_\_\_ Names of other places family has lived during past 3 years \_\_\_\_\_  
Shall we mail you literature about the prevention of malaria?  
\_\_\_\_\_

*Note:*

The object of this census is to learn in which sections of the county malaria cases have occurred recently. It is desired that the information be obtained by the pupil from some responsible member of the family, either from a parent or a grown person. The card should then be returned to the teacher or it can be dropped in the nearest mail box. *No stamp is required.*

Signature of Parent or an adult member of family \_\_\_\_\_  
Post office address \_\_\_\_\_

*Reverse:*

Treasury Department

U. S. Public Health Service    Penalty for private use to avoid  
Office of Collaborating Epidemiologist    Payment of postage \$300

**COLLABORATING EPIDEMIOLOGIST, U. S. P. H. S.  
STATE BOARD OF HEALTH,  
COLUMBIA, S. C.**



An effort is being made to interest the nurses in the counties without health organizations, in malaria control work, pointing out what the nurse can do, what information she can impart and how important malaria control work is in malarious counties to the welfare of children under ten years of age.

In addition to the measures that have been taken to reach the rural people through county organizations the following state-wide measures have been carried on.

1. All hardware concerns have been circularized requesting them to carry wire screening of no less than 16 meshes to the inch. Encouraging co-operation was received from practically all concerns, particularly from the larger companies.

2. The Southern Power Company, at our suggestion, employed an experienced man on full time basis to make a study of all their impounded water reservoirs to discover what measures should be taken to prevent the spread of malaria at existing ponds and to advise measures to prevent the occurrence, if possible, of malaria whenever new ponds are to be created.

He has been employed since June. Some of his work is in this State and some in North Carolina. His investigations disclosed an area of about 20 square miles in western North Carolina in which several hundred people suffer from malaria, the origin of which can evidently be traced to the year 1916 when James River, near Morganton, N. C., changed its course and left a large lagoon without an outlet in which *A. quadrimaculatus* breed profusely. In one bedroom he caught 68 *A. quadrimaculatus*, a mother and child being ill with malaria at the time. He secured quantities of quinine and distributed it at cost among the people in the vicinity, and placed over 20,000 top minnows in the lagoon.

3. Each year for the past three years a post card census of malaria cases occurring in physicians' practices has been taken. From these cards it is possible to locate roughly, endemic foci of malaria in some of the counties. In counties where county health officers exist this data has been turned over to them. In other counties no use has yet been made of the material but as soon as personnel can be obtained to engage in malaria control work in such counties the information can be used.

4. Upon recommendation by us, the S. A. L. Railroad requested a survey of its railroad lines. As a result of Mr. Fuchs'

survey, the Railroad Company appropriated funds to screen all employees' houses in this state, as a beginning of its malaria control activities. Officials of the Railroad engaged in development work, are co-operating with us in arousing sentiment in some of the malarious counties for county health organizations to direct malaria control activities and other health work.

5. The three principal railroads in the state, the Southern, Atlantic Coast Line and Seaboard Air Line,—at our request placed standard treatment placards in all of their railroad stations.

6. The State Superintendent of Education is co-operating in making a school census of malaria cases. When it is completed an effort will be made to start classes in Dr. Carter's primer in those school districts showing the greatest need for such study.

7. Exhibits were shown at the State Fair and at some of the county fairs. The Health Officer of Charleston County stressed the importance of malaria control work and hookworm work in his exhibit.

In order to induce county authorities to appropriate funds for county malaria control work it is important to have county data to show them. General statements are not convincing. In order to impress the various county authorities with the necessity for the work as much data regarding the malaria situation in the county will be collected as possible. A large part of this will come from the physicians' post card census now available for four years, and additional data will probably accumulate from the school pupil's census card filled out in the home by an adult member of the family, and by blood and spleen examinations of some of the pupils.

The following table shows the results of our canvass of the physicians of the State, with reference to the number of cases of malaria occurring in their practice during the past twelve months, as compared with previous years.



## MALARIA CASES REPORTED BY PHYSICIANS.

	1923			1922			1921			1920	
	Cases	Cards to Doctors	Replies Received	Cases	Cards to Doctors	Replies Received	Cases	Cards to Doctors	Replies Received	Cases	Replies Received
Abbeville .....	174	17	8	165	18	7	36	.....	7	5	2
Aiken .....	175	30	7	380	31	17	25	.....	4	20	2
Allendale .....	265	11	4	1 353	11	6	400	.....	1	.....	7
Anderson .....	59	46	24	122	47	30	88	.....	28	1	7
Bamberg .....	175	12	3	889	12	8	24	.....	4	1 350	4
Barnwell .....	98	12	4	654	12	4	267	.....	6	208	1
Beaufort .....	101	11	3	274	11	7	18	.....	4	338	5
Berkeley .....	250	4	1	1 500	4	1	.....	.....	.....	.....	.....
Calhoun .....	400	11	2	900	11	7	.....	.....	1 000	.....	1
Charleston .....	1 022	77	29	2 374	80	42	1 726	.....	34	92	8
Cherokee .....	139	15	10	126	14	9	78	.....	6	50	2
Chester .....	62	24	13	353	26	17	54	.....	9	200	2
Chesterfield .....	23	12	3	32	13	5	8	.....	4	8	2
Clarendon .....	134	16	6	270	16	5	25	.....	3	408	4
Colleton .....	1 108	18	6	610	19	5	300	.....	6	300	1
Darlington .....	279	29	9	625	32	17	206	.....	12	99	6
Dillon .....	208	16	6	140	17	6	9	.....	6	32	3
Dorchester .....	232	19	2	692	19	2	291	.....	8	400	4
Edgefield .....	56	12	6	105	12	7	175	.....	8	16	6
Fairfield .....	499	14	9	877	14	9	70	.....	3	50	1
Florence .....	943	38	12	1 139	42	22	44	.....	7	1 935	6
Georgetown .....	1 480	12	6	1 663	13	9	1 250	.....	7	525	6
Greenville .....	54	78	32	101	92	50	55	.....	49	14	12
Greenwood .....	42	24	15	92	24	19	76	.....	18	110	7
Hampton .....	1 307	19	6	1 195	20	7	426	.....	7	1 300	2
Horry .....	360	12	6	835	12	6	200	.....	4	130	5
Jasper .....	60	3	1	175	3	1	.....	.....	1	.....	.....
Kershaw .....	46	21	5	365	22	8	50	.....	9	285	5
Lancaster .....	39	13	4	195	15	8	.....	.....	.....	58	3
Laurens .....	79	25	13	165	26	19	49	.....	21	44	12
Lee .....	125	20	2	188	22	6	100	.....	3	31	2
Lexington .....	110	22	8	744	23	8	174	.....	11	759	9
McCormick .....	61	6	2	52	7	2	10	.....	2	.....	1
Marion .....	993	14	6	1 027	14	8	350	.....	6	375	5
Marlboro .....	469	16	7	449	17	10	372	.....	8	25	1
Newberry .....	371	32	14	705	33	15	258	.....	9	225	4
Oconee .....	2	19	15	5	19	14	1	.....	14	.....	7
Orangeburg .....	3 730	44	15	7 319	44	17	870	.....	11	765	8
Pickens .....	0	22	10	5	23	11	7	.....	19	31	2
Richland .....	178	29	14	786	45	19	642	.....	9	66	11
Saluda .....	74	11	3	275	11	5	20	.....	1	.....	2
Spartanburg .....	118	82	39	106	86	48	80	.....	18	185	17
Sumter .....	122	25	10	408	27	11	49	.....	7	132	4
Union .....	94	19	8	93	19	11	37	.....	2	47	3
Williamsburg .....	756	14	9	1 570	14	9	.....	.....	.....	595	4
York .....	87	24	15	133	24	15	23	.....	4	45	5
Total .....	17 157	1 060	433 32 228	1 116	569	8 953	930	394	12 259	204	

These figures indicate that there has been less malaria in the state this year than last and the conclusion is borne out by the reports of malaria deaths received by the Bureau of Vital Statistics thus far. Some of this reduction is due to the fact that there has been a deficiency in the rainfall this year but we believe that some of it is also due to a better understanding by the public of methods to protect themselves against malaria, particularly by the free use of quinine and of screening.

There has been a gratifying decrease in the malaria death rate since 1916, when records of malaria deaths were first begun to be kept. This decrease is shown in the table below:—

Year	Death rate per 100,000
1916 .....	18.0
1917 .....	17.5
1918 .....	17.5
1919 .....	18.0
1920 .....	15.0
1921 .....	12.0
1922 .....	14.0
1923 (11 months) .....	6.0

Enter Table

#### URBAN MALARIA CONTROL.

Control measures have been continued at the following towns, some of them in close co-operation with this Department; others carrying on the work almost entirely alone.—

Bamberg  
Beaufort  
Chester  
Ehrhardt  
Fairfax  
Greer  
Hampton  
Harleyville  
Hartsville  
Holly Hill  
Mt. Holly  
St. George



At the following towns control measures were instituted this year for the first time:—

Branchville  
Marion  
Mullins  
Saluda

The work at Saluda was only partly competed because of a change in administration during the summer.

Good results were obtained at Marion and Mullins.

At Branchville, work was not started until late in the year because of a delay in disposing of the bonds authorized at a municipal election held during the summer.

Mr. R. S. Baynard resigned on October 1st, and the services of Mr. P. G. Hasell of Charleston were obtained in his place.

Respectfully submitted,

L. M. FISHER,  
Associate Sanitary Engineer.  
In Charge Mal. Cont. Work in S. C.

REPORT OF WORK DONE BY DR. A. H. HAYDEN,  
EPIDEMIOLOGIST, STATE BOARD OF  
HEALTH, FROM JANUARY 1, TO  
DECEMBER 31, 1922,  
INCLUSIVE.

Columbia, S. C., December 15, 1923.

*To the Chairman and Members of the Executive Committee of  
the South Carolina State Board of Health.*

Gentleman: I herewith make you report of the various places visited by me and the work done during the year 1923 in pursuance of efforts to control epidemic diseases in South Carolina.

Besides the travel necessary for the conduct of this work, I have, as usual, been engaged in various efforts for the furtherance of public health work in the State by delivering many addresses at schools, colleges and community gatherings, as well as at various special meetings with civil authorities and local boards of health of towns throughout the State, and advising with them in various matters such as the steps necessary to be

taken, etc., in the control of epidemic diseases and the carrying out of State laws governing health and the rules and regulations of your Board. In addition, I have, of course, done considerable office work in the way of correspondence, attention to telephonic and telegraphic matters brought to me for my attention, etc.

This report I respectfully submit for your information and, I trust, approval.

*January 10.* Visited Lakesland to investigate reported outbreak of smallpox.

*January 11-12.* Visited Florence, S. C., to investigate cases of skin disease and enforce vaccination in Willow Creek school, Florence County.

*January 15.* Visited Cope, S. C., to investigate outbreak of smallpox and determine question concerning admission of children to school from homes in which cases of smallpox were. Also addressed school children and meeting of citizens.

*January 17.* Columbia, S. C., consultation with State Superintendent of Education relative to health laws governing schools of the State.

*January 18-19.* Visited Florence, S. C., to address Mothers and Teachers League on health laws, etc., pertaining to schools and children.

*January 23-24.* Bennettsville, S. C.—To deliver address to Mothers and children of public schools on health laws governing schools, etc.

*January 24.* Visited Clio, S. C., to address meeting of Mothers and school children on general health laws.

*February 2.* Trip to Lucknow, S. C., to see two cases of epidemic form of Cerebro-Spinal Meningitis and see that proper quarantine was established and children treated.

*February 6-7.* Visited Timmons ville, S. C., and made visit to Brownwood and Glenwood schools in the country to notify school authorities that compulsory vaccination laws must be enforced in these schools and to address a public meeting at Glenwood school.

*February 7.* Timmons ville, S. C., arranging for organization of local board of health with town authorities.

*February 16-17.* Trip to Saluda, S. C., to address the "Fathers Section" of the School Improvement League.



*February* 22. Advised with Attorney-General on enforcement of compulsory vaccination in town of Cope, S. C., by local authorities.

*February* 26. Trip to Lancaster, S. C., to advise with local authorities of complaints received by the State Board of Health to the effect that the town was not maintaining an active local Board of Health as required by law.

*March* 26. Visited White Pond, S. C., to investigate an outbreak of smallpox, to enforce proper quarantine of case and see that unvaccinated school children and contacts were vaccinated, properly quarantined, etc.

*April* 1. Columbia, S. C. Addressed boys of Benedict College on venereal diseases and sex matters.

*April* 5-6. Winnsboro, S. C. Visited colored schools with County Health Officer and addressed school children and others on opening of Health Week.

*April* 9. St. Matthews, S. C. To investigate outbreak of smallpox in town and vicinity, advise with town authorities and organize a local board of health.

*April* 10. Visited Batesburg, S. C., to investigate outbreak of smallpox, diagnose cases in dispute and enforce proper quarantine of cases.

*April* 11. Lexington County, to diagnose a case of smallpox and see, with the attending physician, a case of suspected Cerebro-Spinal Meningitis.

*April* 16. Charleston, S. C., attending meeting of S. C. Public Health Association.

*April* 17-19. Charleston, S. C. In attendance upon Annual Meeting of the South Carolina Medical Association.

*April* 30. Cheraw, S. C., to address citizens meeting and school authorities under the auspices of the Parents-Teachers League.

*May* 1. Cheraw, S. C. Address relative to procedure necessary to put on a tonsillar-adenoid clinic for white school children.

*May* 3-4. St. Stephens, S. C., to investigate outbreak of smallpox. Vaccinated contacts and enforced quarantine.

*May* 8. Richland County, on Asylum Road, to see and diagnose suspected cases of smallpox.

*May 14.* Pacific Mills, Columbia, S. C., to advise with local Board of Health, superintendent of Columbia Hospital and Columbia City Health Officer on general health subjects.

*May 15.* Trenton, S. C. To investigate smallpox outbreak in Trenton and vicinity. To advise with authorities and organize a local Board of Health.

*May 22-23.* Bennettsville, S. C. To advise with Town Council and local Board of Health in the matter of adoption of modern health rules for the town.

*May 25-26.* Pickens, S. C., to investigate supposed focus of Typhoid Fever infection 8 miles from Pickens.

*June 7-9.* Society Hill, S. C. To address citizens meeting on general health conditions and health laws governing schools in State. Auspices of Parents-Teachers League.

*June 11.* Visit to Perry, S. C., to investigate smallpox outbreak.

*June 13.* Trip to Fort Motte, S. C., to investigate smallpox outbreak.

*June 13-14.* Great Falls, S. C., to investigate complaint relative to garbage disposal.

*June 14.* Rock Hill, S. C., to investigate outbreak of smallpox and enforce quarantine.

*June 18-19.* Spartanburg, S. C. To investigate condition of City swimming pool and advise with City authorities as to danger from its use of contamination.

*June 20.* Trip to Haynes, S. C., to investigate complaint of nuisance and danger from hog pens.

*June 20.* Trip to Spartanburg, S. C., to investigate complaint of possible contamination of spring on Dr. Lesesne's farm from conditions on neighboring farm.

*June 22-23.* Visited Furman, S. C., to make address to white and colored meetings on health subjects.

*June 27.* Delivered address before the Annual meeting of the South Carolina Dental Association, Columbia, S. C.

*June 28-29.* Trip to Great Falls, S. C., to take up with mill authorities general sanitary conditions of mill village and Elizabeth Heights and to advise as to best methods of procedure to rectify certain unsanitary conditions in Elizabeth place and



direct them as to steps necessary to be taken to have appointed by the State Board of Health a Board of Health for that school district.

*July 6.* Columbia, S. C. Visited sections of City in consultation with City Health Office relative to drainage.

*July 6.* Columbia, S. C. Visited sections of City consultation with the local rural board of health, Columbia City Health Officer, and Superintendent of the Columbia Hospital relative to action necessary to be taken in matter of nuisance which was a menace to the health of residents of Pacific Mill Village and adjoining territory.

*July 13.* Columbia, S. C. Arranged for meeting of county, City and hospital authorities with State Health Officer regarding outbreak of typhoid fever within jurisdiction of Pacific Mills Board of Health just outside of City limits.

*July 14.* Columbia, S. C. Made house to house canvass relative to outbreak of typhoid fever on South Marion and Sumter Streets, Palmetto Alley and Moore Avenue, just outside of City limits, diagnosing of cases and determining origin, etc., which situation the State Board of Health had to take over for handling on account of the rural board of health of school district number 4 (Pacific Mills), having failed to act or attempt to act for its suppression.

*July 16.* Visit to Florence, S. C., to advise with health officer relative to swimming pools.

*July 17.* Visit to Darlington, S. C., to advise with health authorities relative to swimming pools.

*July 23.* Trip to Charleston, S. C., to visit vicinity on investigation of complaints in County.

*July 24-25.* Lancaster, S. C. To investigate outbreak of typhoid fever and complaint of drainage conditions of town as a nuisance to private citizens.

*July 27.* Swansea, S. C., to investigate outbreak of typhoid fever and determine source of origin.

*July 30.* Chester, S. C., to investigate outbreak of typhoid fever on request of President of local Board of Health.

*August 2.* To Olar, S. C., to diagnose three cases which proved to be smallpox.

*August 8.* Clemson College, S. C. To see family of seven who are epileptics, at request of civil authorities of Clemson College.

*August 9.* Chester, S. C., to see County Commissioners concerning condition of county road through Elizabeth Heights leading to Great Falls, S. C., and to review typhoid situation in Chester with local Board of Health.

*August 11.* Columbia, S. C., to inspect and condemn a dry well at 3004 Second Avenue, Shandon Annex.

*August 13.* Sumter, S. C., to advise relative to construction of an abattoir.

*August 14.* Florence, S. C., to investigate cause of outbreak of typhoid fever in rural district.

*August 15.* Columbia, S. C. State Hospital to see, in consultation, several cases of eruptive diseases.

*August 21.* Columbia, S. C. To investigate condition of cow and hog lots complained of on Pacific Mill property.

*August 22.* Columbia, S. C. To investigate on complaint of trash dump on Pacific Mills property.

*August 30-31.* Trip to Clemson College, S. C., to make, on request, a general sanitary inspection.

*September 4-5.* To Brownsville, S. C., to investigate outbreak of typhoid and malaria fevers.

*September 24.* Trip to Lugoff, S. C., to diagnose cases of smallpox and advise as to quarantine and vaccination.

*September 25-26.* Trip to Blackville, S. C., to determine, at request of local Board of Health, whether or not there were children in the public schools suffering from contagious diseases.

*October 4.* Inspected, on complaint of City of Columbia, conditions at Phillips Dairy, just outside city limits.

*October 8-10.* Clemson College and Calhoun, S. C., to deliver address to school improvement leagues.

*October 18-19.* Blackville, S. C., to hold clinic of public school children (350).

*October 22.* Columbia, S. C., to investigate trash dump on Hagood and Sims Avenues.

*October 12.* Columbia, S. C., to investigate reported outbreak of typhoid fever near Gonzales and Hughes dairies.



*November 1-3.* Trip to Ridgeland, S. C., to enforce vaccination to public schools and advise with authorities and others on the subject.

*November 5.* Rock Hill, S. C., to investigate cause of outbreak of typhoid fever in Winthrop College.

*November 6.* Spartanburg, S. C., and Clifton, S. C., to direct in handling of outbreak of smallpox in Clifton Mill village.

*November 10-16.* Trip to Washington to attend meeting of Southern Medical and Public Health Associations.

*November 21-22.* De la Howe State Training School—To make official annual inspection for State Board of Health.

*November 22-23.* Cedar Springs School for the Deaf and Blind—To make official annual inspection for State Board of Health.

*November 23-24.* Clemson College, S. C.—To make official annual inspection for State Board of Health.

*November 27.* Columbia, S. C.—To make official annual inspection of University of South Carolina for State Board of Health.

*December 6.* Visit to Congaree, S. C., to investigate outbreak of smallpox among railroad gangs and see that quarantine orders were obeyed.

*December 8.* Trip to St. Matthews on call of local Board of Health to diagnose case and enforce quarantine of smallpox.

*December 8.* Columbia, S. C. Addressed Nurses Institute.

*December 9-10.* York, S. C., to diagnose doubtful cases which proved to be smallpox. Conferred with town council and local board.

*December 10.* Blythewood, S. C., and vicinity—To see case of cerebro-spinal meningitis and make lumbar puncture.

*December 11-12.* Trip to Harleyville, S. C., to deliver an address.

*December 14-15.* Trip to Rock Hill, S. C., to diagnose cases of smallpox in villages of Industrial Cotton Mills Company and determine question of vaccination and quarantine.

*December 19.* Trip to Denmark, Bamberg, Ehrhardt, Ashton Lodge, Smoaks, and vicinity, investigating outbreak of smallpox, enforcing vaccination of contacts and enforcing the compulsory vaccination law in public schools.

*December 21-22.* Rock Hill, S. C., making annual inspection of Winthrop College and visiting cases of smallpox with local health officer.

*December 29.* Trip to Pelion, S. C., to diagnose cases of smallpox for physicians and advise authorities as to necessary procedure relative to vaccination and quarantine.

*December 30.* Trip to Barnwell, S. C., to investigate outbreak of smallpox and advise with the local authorities.

A. H. HAYDEN, M. D.,  
Epidemiologist, State Board of Health.

## HYGIENIC LABORATORY REPORT.

January 1, 1924.

*The Chairman and Members of the Executive Committee, South Carolina State Board of Health.*

Gentlemen: I have the honor to submit the following report of the work of the Hygienic Laboratory for the year 1923.

The *personnel* of the Laboratory is the same as last year, and I wish to acknowledge the efficient and valuable work of each assistant at the Laboratory.

No calls for extra *funds* for supplies or equipment were made during the year, the appropriations for these items being sufficient.

Twenty-six thousand, one hundred and twenty-five *tests* were made at the Laboratory during the year 1923, of which 14,744 were Wassermann tests. Three hundred and seventy-seven animal brains were examined for rabies, a decrease of 191 from last year's number.

Five hundred and sixteen *antirabic treatments* for human beings were prepared at the Laboratory and sent out this year, as compared with seven hundred and sixty-nine patients treated last year. This decrease is in most only a temporary fluctuation, and it is again strongly urged that a bill for the compulsory vaccination of all dogs in the State against rabies be enacted by the State General Assembly at its coming session.

The demand for *typhoid vaccine* was 30 per cent greater than for the previous year, ninety-eight thousand, nine hundred and



sixty-three ampoules being distributed by the Laboratory during the year 1923.

A summarized statement of the work of the Laboratory for the year is enclosed.

Respectfully,

H. M. SMITH, M. D.  
Director of Laboratory

[illegible]



## SUMMARY OF LABORATORY WORK FOR THE YEAR 1923.—Continued.

## 13 Pasteur Treatments:

(1) Complete treatments to December 31st .....	440
(2) Under treatment December 31st .....	31
(3) Treatments discontinued by request of patient .....	45
Total .....	516
(4) Treated at home .....	502
(5) Treated at laboratory .....	14
	516

## (6) Distribution of treatments according to Counties:

Abbeville .....	3	Chesterfield .....	6	Hampton .....	3	Oconee .....	3
Aiken .....	28	Clarendon .....	3	Horry .....	..	Orangeburg .....	19
Allendale .....	..	Colleton .....	..	Jasper .....	..	Pickens .....	49
Anderson .....	28	Darlington .....	27	Kershaw .....	7	Richland .....	18
Bamberg .....	1	Dillon .....	10	Lancaster .....	2	Saluda .....	10
Barnwell .....	1	Dorchester .....	3	Laurens .....	6	Spartanburg .....	41
Beaufort .....	4	Edgefield .....	2	Lee .....	3	Sumter .....	9
Berkeley .....	3	Fairfield .....	7	Lexington .....	16	Union .....	12
Calhoun .....	11	Florence .....	38	Marion .....	..	Williamsburg .....	16
Charleston .....	1	Georgetown .....	18	Marlboro .....	38	York .....	20
Cherokee .....	20	Greenville .....	16	McCormick .....	2		
Chester .....	2	Greenwood .....	6	Newberry .....	4	Total .....	516

## 14. Typhoid Bacterin:

(1) Number of 1 mil ampoules sent out .....	98.963
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	Cases	Cards to Doctors	Replies Received	Cases	Cards to Doctors	Replies Received	Cases	Cards to Doctors	Replies Received	Cases	Cards to Doctors	Replies Received
	1923	1923	1923	1922	1922	1922	1921	1921	1921	1920		1920
Abbeville .....	174	17	8	165	18	7	36	.....	7	5		2
Aiken .....	175	30	7	380	31	17	25	.....	4	20		2
Allendale .....	265	11	4	1353	11	6	400	.....	1	.....		7
Anderson .....	59	46	24	122	47	30	88	.....	28	1		4
Bamberg .....	175	12	3	889	12	8	24	.....	4	1350		7
Barnwell .....	93	12	4	654	12	4	267	.....	6	208		1
Beaufort .....	101	11	3	274	11	7	18	.....	4	338		5
Berkeley .....	250	4	1	1500	4	1	.....	.....	.....	.....		.....
Calhoun .....	400	11	2	900	11	7	.....	.....	.....	1 000		1
Charleston .....	1 022	77	29	2 374	80	42	1 726	.....	34	92		8
Cherokee .....	139	15	10	126	14	9	78	.....	6	50		2
Chester .....	62	24	13	353	26	17	54	.....	9	200		2
Chesterfield .....	23	12	3	32	13	5	8	.....	4	8		2
Clarendon .....	134	16	6	270	16	5	25	.....	3	408		4
Colleton .....	1 108	18	6	610	19	5	300	.....	6	300		1
Darlington .....	279	29	9	625	32	17	206	.....	12	99		6
Dillon .....	208	16	6	140	17	6	9	.....	6	32		3
Dorchester .....	232	19	2	692	19	2	291	.....	8	400		4
Edgefield .....	56	12	6	105	12	7	175	.....	8	16		6
Fairfield .....	499	14	9	877	14	9	70	.....	3	50		1
Florence .....	943	38	12	1 139	42	22	44	.....	7	1 935		6
Georgetown .....	1 480	12	6	1 663	13	9	1 250	.....	7	525		6
Greenville .....	54	78	32	101	92	50	55	.....	49	14		12
Greenwood .....	42	24	15	92	24	19	76	.....	18	110		7
Hampton .....	1 307	19	6	1 195	20	7	426	.....	7	1 300		2
Horry .....	360	12	6	835	12	6	200	.....	4	130		5
Jasper .....	60	3	1	175	3	1	.....	.....	1	.....		.....
Kershaw .....	46	21	5	365	22	8	50	.....	9	285		5
Lancaster .....	39	13	4	195	15	8	.....	.....	.....	58		3
Laurens .....	79	25	13	165	26	19	49	.....	21	44		12
Lee .....	125	20	2	188	22	6	100	.....	3	31		2
Lexington .....	110	22	8	744	23	8	174	.....	11	759		9
McCormick .....	61	6	2	52	7	2	10	.....	2	.....		1
Marion .....	993	14	6	1 027	14	8	350	.....	6	375		5
Marlboro .....	469	16	7	449	17	10	372	.....	8	25		1
Newberry .....	371	32	14	705	33	15	258	.....	9	225		4
Oconee .....	2	19	15	5	19	14	1	.....	14	.....		7
Orangeburg .....	3 730	44	15	7 319	44	17	870	.....	11	765		8
Pickens .....	.....	22	10	5	23	11	7	.....	13	31		2
Richland .....	178	29	14	786	45	19	642	.....	9	66		11
Saluda .....	74	11	3	275	11	5	20	.....	1	.....		2
Spartanburg .....	118	82	39	106	86	48	80	.....	18	135		17
Sumter .....	122	25	10	408	27	11	49	.....	7	132		4
Union .....	94	19	8	93	19	11	37	.....	2	47		3
Williamsburg .....	756	14	9	1 570	14	9	.....	.....	.....	595		4
York .....	87	24	15	133	24	15	23	.....	4	45		5
Totals .....	15 157	1 060	433	32 228	1 116	569	8 953	930	394	12 259		204



## DIVISION OF VENEREAL DISEASE CONTROL.

Being very much handicapped because of the lack of funds the activities in the Division of Venereal Diseases have been very much limited during the year 1923.

There was no appropriation made by the State for the work in this section but the Federal Government, in addition to the sum of \$1,592.77, has furnished quite a large supply of Neoarsphenamine free which has been distributed on request to physicians for administration to indigent patients.

In order to secure the Federal funds, Greenville City and County, Spartanburg City and County and Orangeburg City and County placed their appropriations in the State Treasury to match the \$1,592.77 given us by the Federal Government, otherwise the State Board of Health would have been without funds to give aid to the venereally diseased persons who called for assistance.

In addition to several thousand pieces of literature having been distributed, the Attract-O-Scope machine was used as an exhibit at the State Fair—a large number of slides bearing on venereal diseases were used in this machine. This exhibit attracted great crowds each day of the Fair.

While this report does not show a great deal of work done during the year 1923, it does show the great need for such activities and it is earnestly hoped that the General Assembly will make the small appropriation requested to match Federal Funds.

The three active clinics are a great credit to the State, and the State Board of Health would recommend that the other counties follow their example. These clinics have done splendid work as shown by the following analysis of their work.

### ANALYSIS OF WORK

Syphilis male and female .....	2 262
Gonorrhoea male and female .....	1 756
Chancroid Male and female .....	75
Total all cases .....	4 093
Wasserman tests .....	2 164
Microscopic examinations .....	4 687
Neoarsphenamine (ampoules) .....	7 202

## BUREAU OF VITAL STATISTICS.

December 17, 1923.

Dr. J. Adams Haynes,  
Secretary State Board of Health,  
Columbia, S. C.

My dear Doctor: Herewith please find report of this office for ten months ending, October 31, 1923.

You will note in the birth and death rates the United States Census estimate of population and mine.

I contend that the method used by the Census Bureau in estimating population in the years between census is unreasonable and arbitrary, and that the figures given for 1923 are at least 100,000 more than they should be. I have advices from the United States Labor Bureau and Clemson College and after a survey they state that 25,000 negroes and about 18,000 whites have left the State in the past year. How many left from January, 1920 to November 1, 1922, when the exodus was at its height on account of the boll weevil, I cannot say.

Over the entire registration area of the United States the birth rate has fallen off one per thousand. In my opinion birth control is a large factor in this decrease. It is being practiced to a much greater extent than we think.

Everything else is working as usual.

With regards,

Respectfully yours,

C. W. MILLER,  
Assistant State Registrar.



COMPARATIVE STATEMENT OF DEATH RATE IN SOUTH CAROLINA FOR 1922 AND 1923  
FOR TEN MONTHS ENDING OCTOBER 31ST.

	1922		1923
Whites .....	9.2	Whites .....	9.4
Blacks .....	13.6	Blacks .....	13.9

COMPARATIVE STATEMENT OF BIRTH RATE IN SOUTH CAROLINA FOR 1922 AND 1923  
FOR TEN MONTHS ENDING OCTOBER 31ST.

	1922		1923
Whites .....	25.1	Whites .....	24.3
Blacks .....	25.6	Blacks .....	22.8

BIRTH AND DEATH RATE IN SOUTH CAROLINA FOR 1922 AND 1923

	1922		1923
Birth Rate .....	26.1	Birth Rate .....	24.9
Death Rate .....	11.8	Death Rate .....	11.7

MY ESTIMATE OF BIRTH AND DEATH RATE FOR 1923.

Birth Rate .....	26.3	Death Rate .....	12.4
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TOTAL NUMBER OF BIRTHS AND DEATHS IN SOUTH CAROLINA FROM JANUARY TO  
OCTOBER 31, 1922 AND 1923

COUNTY	Deaths		Births	
	1922	1923	1922	1923
Abbeville .....	247	253	601	515
Aiken .....	442	419	807	838
Allendale .....	137	152	337	362
Anderson .....	659	691	1 836	1 701
Bamberg .....	161	210	458	386
Barnwell .....	190	107	327	337
Beaufort .....	405	345	491	420
Berkeley .....	282	270	527	510
Calhoun .....	178	192	468	357
Charleston .....	1 576	1 685	2 183	2 105
Cherokee .....	269	278	677	668
Chester .....	240	313	661	610
Chesterfield .....	265	232	765	713
Clarendon .....	299	265	772	605
Colleton .....	192	199	553	432
Darlington .....	396	424	911	863
Dillon .....	195	202	565	536
Dorchester .....	150	169	357	310
Edgefield .....	182	198	368	317
Fairfield .....	216	213	561	521
Florence .....	618	617	1 287	1 155
Georgetown .....	252	276	478	418
Greenville .....	919	983	2 206	2 160
Greenwood .....	347	333	684	635
Hampton .....	186	194	410	345
Horry .....	296	271	932	887
Jasper .....	89	90	213	203
Kershaw .....	213	309	651	572
Lancaster .....	250	260	671	587
Laurens .....	351	340	870	745
Lee .....	219	201	658	509
Lexington .....	263	260	641	732
McCormick .....	125	115	286	213
Marion .....	200	185	442	457
Marlboro .....	362	462	757	787
Newberry .....	308	324	815	713
Oconee .....	252	239	699	671
Orangeburg .....	681	656	1 674	1 437
Pickens .....	215	235	841	830
Richland .....	1 161	1 185	1 525	1 590
Saluda .....	132	136	316	306
Spartanburg .....	772	833	2 101	1 957
Sumter .....	566	558	1 112	919
Union .....	187	232	578	577
Williamsburg .....	309	283	746	723
York .....	457	487	1 004	974
Total .....	16 411	16 821	36 822	34 208

Death Rate per M. ....	11.5	1922	Infant Mortality 1922.....	94.5
Birth Rate per M. ....	25.7		Infant Mortality 1923.....	102.8

1923 DEATHS

Rate by Government estimate of population .....	11.6 per M.
Rate by my estimate of population .....	12.2 per M.

1923 BIRTHS

Rate by Government estimate of population .....	23.5 per M.
Rate by my estimate of population .....	24.9 per M.



SUPPLEMENTARY REPORT AND COMPARATIVE STATEMENT OF DEATHS FOR NOVEMBER AND DECEMBER 1922 AND 1923.

	Attended by Physicians		Unattended by Physicians
	1922	1923	1923
Tuberculosis, Pulmonalis .....	232	202	25
Tuberculosis, other forms .....	17	11	..
Pellagra .....	56	48	2
Diphtheria .....	33	27	7
Scarlet Fever .....	1	..	..
Measles .....	..	5	1
Typhoid Fever .....	35	39	4
Smallpox .....	..	..	..
Cancer and Malignant Tumors .....	117	120	12
Malaria .....	44	17	27
Meningitis, Cerebro Spinal .....	3	10	1
Whooping Cough .....	8	11	16
Pneumonia .....	279	235	97
Pneumonia, Broncho .....	160	135	1
Pneumonia, Hypostatic .....	5	4	..
Pleurisy .....	..	1	..
Diseases of Circulation .....	593	612	78
Diseases of Kidneys .....	247	269	19
Syphilis .....	15	7	1
Syphilis, Congenital .....	6	12	1
Tetanus .....	1	..	..
Tetanus, Neonatorum .....	..	3	..
Dysentery .....	9	10	4
Dysentery, Amebic .....	1	..	..
Scurvy .....	..	..	..
Intestinal Diseases .....	112	111	17
Erysipelas .....	5	5	..
Homicide .....	38	53	..
Suicide .....	7	10	..
Auto Accidents .....	18	39	..
R. R. Accidents .....	11	16	..
General Accidents .....	67	65	..
Lightning .....	..	..	..
Legal Electrocutions .....	1	2	..
Poliomyelitis .....	2	..	..
Influenza and Lagrippe .....	97	22	11
Encephalitis, Lethargic .....	5	6	..
Alcoholism .....	8	4	..
Diabetes .....	19	21	4

DEATHS FROM MALARIA IN THE FOLLOWING COUNTIES FOR TEN MONTHS ENDING  
OCTOBER 31, 1922 AND 1923.

	1922	1923	1923 Unattended by Physicians
Abbeville .....	..	..	..
Aiken .....	10	4	..
Allendale .....	4	..	1
Anderson .....	..	1	..
Bamberg .....	3	2	2
Barnwell .....	4	1	..
Beaufort .....	6	..	33
Berkeley .....	5	3	40
Calhoun .....	10	2	3
Charleston .....	23	7	31
Cherokee .....	3	..	..
Chester .....	3	1	..
Chesterfield .....	..	3	..
Clarendon .....	2	..	4
Colleton .....	7	5	14
Darlington .....	2	3	..
Dillon .....	1	..	..
Dorchester .....	3	2	..
Edgefield .....	..	1	1
Fairfield .....	3	1	..
Florence .....	13	4	1
Georgetown .....	7	6	12
Greenville .....	..	..	..
Greenwood .....	..	1	..
Hampton .....	5	1	3
Horry .....	3	..	1
Jasper .....	3	2	5
Kershaw .....	3	1	..
Lancaster .....	2	2	..
Laurens .....	3	..	1
Lee .....	3	1	..
Lexington .....	1	2	..
McCormick .....	..	1	..
Marion .....	2	..	1
Marlboro .....	2	3	..
Newberry .....	4	1	..
Oconee .....	1	..	..
Orangeburg .....	33	7	8
Pickens .....	..	..	..
Richland .....	8	4	1
Saluda .....	1	2	..
Spartanburg .....	..	..	..
Sumter .....	6	1	2
Union .....	..	1	..
Williamsburg .....	5	4	4
York .....	2	5	..
Totals .....	196	85	168



DEATHS FROM PELLAGRA IN THE FOLLOWING COUNTIES FOR TEN MONTHS ENDING  
OCTOBER 31, 1922 AND 1923.

	1922	1923	Unattended by Physicians, 1923
Abbeville .....	10	3	1
Aiken .....	..	4	1
Allendale .....	..	3	..
Anderson .....	20	7	..
Bamberg .....	1	2	..
Barnwell .....	2	3	..
Beaufort .....	1	..	2
Berkeley .....	4	..	1
Calhoun .....	3	..	..
Charleston .....	37	27	4
Cherokee .....	15	3	..
Chester .....	11	8	..
Chesterfield .....	..	1	..
Clarendon .....	1	2	1
Colleton .....	1	2	..
Darlington .....	3	..	..
Dillon .....	2	..	..
Dorchester .....	3	2	1
Edgefield .....	..	3	..
Fairfield .....	8	..	1
Florence .....	9	2	2
Georgetown .....	8	..	..
Greenville .....	14	11	1
Greenwood .....	12	7	..
Hampton .....	..	..	2
Horry .....	2	..	..
Jasper .....	..	..	1
Kershaw .....	2	2	..
Lancaster .....	6	4	..
Laurens .....	9	2	..
Lee .....	1	3	1
Lexington .....	3	2	2
McCormick .....	1	1	1
Marion .....	2	1	..
Marlboro .....	3	2	..
Newberry .....	4	3	..
Oconee .....	7	4	..
Orangeburg .....	6	3	2
Pickens .....	7	2	..
Richland .....	59	73	..
Saluda .....	..	1	..
Spartanburg .....	12	17	1
Sumter .....	9	4	..
Union .....	6	5	..
Williamsburg .....	1	3	..
York .....	14	13	..
Total .....	319	242	25

DEATHS FROM TYPHOID FEVER IN THE FOLLOWING COUNTIES FOR TEN MONTHS  
ENDING OCTOBER 31, 1922 AND 1923.

	1922	1923	1923 Unattended by Physicians
Abbeville .....	8	4	..
Aiken .....	9	5	..
Allendale .....	6	3	..
Anderson .....	19	11	..
Bamberg .....	6	6	..
Barnwell .....	8	2	..
Beaufort .....	1	..	..
Berkeley .....	2	..	..
Calhoun .....	1	3	1
Charleston .....	13	5	..
Cherokee .....	7	5	..
Chester .....	4	3	..
Chesterfield .....	3	2	3
Clarendon .....	3	5	1
Colleton .....	1	3	..
Darlington .....	11	5	1
Dillon .....	6	4	..
Dorchester .....	1	2	1
Edgefield .....	3	4	2
Fairfield .....	2	..	..
Florence .....	9	11	..
Georgetown .....	2	1	..
Greenville .....	10	11	..
Greenwood .....	9	6	..
Hampton .....	4	3	2
Horry .....	2	4	4
Jasper .....	..	..	1
Kershaw .....	6	10	1
Lancaster .....	4	6	..
Laurens .....	13	8	..
Lee .....	5	3	1
Lexington .....	7	7	1
McCormick .....	5	6	1
Marion .....	2	..	..
Marlboro .....	10	7	..
Newberry .....	6	3	..
Oconee .....	12	8	..
Orangeburg .....	8	10	5
Pickens .....	8	2	..
Richland .....	17	7	..
Saluda .....	5	3	..
Spartanburg .....	13	9	2
Sumter .....	7	15	2
Union .....	..	3	3
Williamsburg .....	5	3	4
York .....	5	5	..
Totals .....	289	223	33



## COMPARATIVE STATEMENT OF DEATHS IN THE FOLLOWING CITIES FOR 1922 AND 1923

Name of City	1922	1923
Anderson .....	228	234
Charleston .....	1 154	1 199
Columbia .....	....	876
Florence .....	233	254
Greenville .....	270	311
Greenwood .....	102	115
Orangeburg .....	96	99
Rock Hill .....	119	100
Spartanburg .....	265	260
Sumter .....	144	149

For years previous to 1923, Columbia was included in Columbia district and no comparison can be made.

DEATHS FROM TUBERCULOSIS, ALL FORMS, IN THE FOLLOWING COUNTIES FOR TEN MONTHS ENDING OCTOBER 31, 1922 AND 1923.

	1922	1923	1923 Unattended by Physicians
Abbeville .....	22	15	3
Aiken .....	45	35	4
Allendale .....	13	15	2
Anderson .....	38	43	5
Bamberg .....	5	10	4
Barnwell .....	14	11	4
Beaufort .....	21	7	24
Berkeley .....	11	7	16
Calhoun .....	9	13	4
Charleston .....	111	103	20
Cherokee .....	18	35	3
Chester .....	14	19	4
Chesterfield .....	13	13	2
Clarendon .....	8	7	24
Colleton .....	7	9	4
Darlington .....	42	49	8
Dillon .....	14	14	..
Dorchester .....	15	16	2
Edgefield .....	8	13	5
Fairfield .....	17	13	8
Florence .....	51	39	3
Georgetown .....	13	21	12
Greenville .....	137	118	1
Greenwood .....	20	18	..
Hampton .....	12	11	6
Horry .....	12	8	12
Jasper .....	4	2	3
Kershaw .....	8	15	1
Lancaster .....	15	12	10
Laurens .....	22	27	5
Lee .....	18	8	6
Lexington .....	10	10	2
McCormick .....	7	6	5
Marion .....	19	20	2
Marlboro .....	34	25	3
Newberry .....	29	31	6
Oconee .....	12	12	3
Orangeburg .....	38	36	9
Pickens .....	17	7	..
Richland .....	97	142	8
Saluda .....	9	10	..
Spartanburg .....	71	64	7
Sumter .....	35	44	9
Union .....	23	17	2
Williamsburg .....	28	21	14
York .....	42	39	3
Totals .....	1 228	1 215	278



DEATHS FROM THE FOLLOWING DISEASES FROM JANUARY 1ST TO OCTOBER 31ST,  
1922 AND 1923.

	1922		1923	
	Number	Rate	Number	Rate
Tuberculosis, pulmonalis .....	1,121	78.2	1,115	76.6
Tuberculosis, other forms .....	107	7.4	100	6.9
Pellagra .....	319	22.3	242	16.6
Diphtheria .....	93	6.5	85	5.8
Scarlet Fever .....	7	.5	2	.13
Measles .....	1	.06	45	3.1
Typhoid Fever .....	289	20.2	223	15.3
Smallpox .....	5	.4	2	.13
Cancer & Malignant Tumors .....	482	33.6	461	31.6
Malaria .....	196	13.7	85	5.8
Meningitis, Cerebro Spinal .....	27	1.9	26	1.8
Whooping Cough .....	45	3.1	78	5.3
Pneumonia .....	792	55.3	942	64.7
Pneumonia, Broncho .....	437	30.5	597	41.
Pneumonia, Hypostatic .....	12	.8	19	1.3
Pleurisy .....	13	.9	11	.76
Circulation, Diseases of .....	2,506	175.	2,801	192.3
Kidneys, Diseases of .....	1,068	74.6	1,043	71.6
Syphilis .....	55	3.8	45	3.1
Syphilis, Congenital .....	50	3.5	41	2.8
Tetanus .....	20	1.4	13	.9
Tetanus, Neonatorum .....	19	1.3	23	1.6
Dysentery .....	130	9.1	133	9.1
Dysentery, Amebic .....	10	.7	10	.69
Scurvy .....				
Intestinal Diseases .....	852	59.5	973	66.8
Erysipelas .....	18	1.2	13	.9
Homicide .....	210	14.6	150	10.3
Suicide .....	48	3.4	35	2.4
Auto Accidents .....	45	3.1	82	5.6
Railroad Accidents .....	61	4.2	41	2.8
General Accidents .....	210	14.6	226	15.5
Lightning .....	29	2.	17	1.2
Legal Electrocutions .....	4	.2	5	.35
Poliomyelitis .....	10	.7	12	.83
Influenza and Lagrippe .....	176	12.2	291	20.
Encephalitis, Lethargic .....	18	1.2	32	2.2
Alcoholism .....			8	.55
Diabetes .....			92	6.3

BIRTHS IN SOUTH CAROLINA, ACCORDING TO RACE AND SEX FOR NINE MONTHS  
ENDING SEPTEMBER 30, 1922 AND 1923.

1922			
WHITE		BLACK	
Male .....	8,250	Male .....	8,517
Female .....	7,727	Female .....	8,204
	15,977		16,722
Unknown .....			.40
1923			
WHITE		BLACK	
Male .....	8,112	Female .....	8,205
Female .....	7,497	Female .....	7,382
	15,609		14,925
Unknown .....			.44

DEATHS IN SOUTH CAROLINA, ACCORDING TO RACE AND AGE FOR TEN MONTHS  
ENDING OCTOBER 31, 1922 AND 1923.

	White Male	White Male	Black Male	Black Male
	1922	1923	1922	1923
Under 1 year .....	704	757	1 202	1 209
1 to 5 years .....	300	368	400	486
5 to 10 years .....	64	85	121	121
10 to 20 years .....	164	135	329	304
20 to 30 years .....	210	183	507	499
30 to 40 years .....	199	205	419	426
40 to 50 years .....	257	271	428	487
50 to 60 years .....	318	321	421	419
60 to 70 years .....	502	506	420	455
70 to 80 years .....	456	482	340	387
Over 80 years .....	168	181	242	242
Unknown .....	26	11	36	16
Totals .....	3 376	3 505	4 863	5 051

  

	White Female	White Female	Black Female	Black Female
	1922	1923	1922	1923
Under 1 year .....	547	564	1 030	993
1 to 5 years .....	284	288	359	431
5 to 10 years .....	55	71	145	120
10 to 20 years .....	150	151	374	386
20 to 30 years .....	241	192	757	723
30 to 40 years .....	257	267	567	590
40 to 50 years .....	250	251	489	509
50 to 60 years .....	226	257	345	347
60 to 70 years .....	386	385	338	399
70 to 80 years .....	446	455	306	286
Over 80 years .....	284	306	276	266
Unknown .....	19	6	31	22
Totals .....	3 145	3 193	5 017	5 072
Indians .....	8			



# ANNUAL REPORT OF DEPARTMENT OF RURAL SANITATION AND COUNTY HEALTH WORK.

## SOUTH CAROLINA STATE BOARD OF HEALTH.

L. A. RISER, M. D., In charge.

*To the Chairman and Members of the Executive Committee,  
South Carolina State Board of Health.*

Gentlemen: I herewith submit a narrative and statistical report of work done by the Department of Rural Sanitation and County Health Work during the year 1923:

Each year our Department has broadened its activities. This year we have added Dental Clinics to our field of work. Five years ago two counties put on full time Health Departments. Our work at this time consisted mainly in making examinations and giving treatments for hookworm disease and building sanitary privies. Today our activities cover every phase of public health work. Three new counties have put on full time Health Departments and began their work in the second quarter of the year. Nearly one-fourth of the rural people in South Carolina are now protected by full time Health Departments. We have always had difficulty in securing nurses with public health training and several of our counties were without nurses for a number of months this year, but the Bureau of Public Health Nursing, with which this Department is closely affiliated, has worked diligently to supply the demand for nurses and each of our counties now has a nurse as a member of the staff.

In our report last year we stated that a large percentage of children examined had dental defects and asked for the establishment of dental clinics throughout the State. As our report will show, this Department is now organized and working with splendid results. Thirteen counties have taken advantage of these clinics.

With 45,782 anti-typhoid inoculations to our credit for the year and 77,133 for the past three years, and in addition, the immense number of inoculations now being given by physicians, we believe typhoid fever will soon be unknown in our State.

The hookworm re-surveys show that hookworm disease has been almost eliminated, and the results of intensive campaigns against these two diseases might be used as examples of what may and

will be accomplished in the eradication of other diseases by public health supervision and intelligent co-operation of the medical profession and the laity.

We believe that every county in the State which maintains a County Health Department should be given at least \$1,000.00 by the State each year. This money should be dispensed through the State Board of Health. In this way all County Health Departments would be tied more closely to the State Health Department, and would be a part of the great scheme of Health Conservation in South Carolina. We would urge the Executive Committee of the State Board of Health to make this recommendation to the General Assembly. We would also urge that some amendment be made to our Sanitary Code which would give broader powers to County Health Officers in order to enable them to enforce preventive measures. Our present code was written before the day of the County Health Officer, and its rules and regulations apply more specifically to laws governing towns and cities.

### MOVING PICTURES.

With a larger personnel and our moving picture department running full time we have been able to do some work in each of forty counties this year. Our moving pictures have been shown in twenty-one counties, to 64,102 people. The Bureau of Child Hygiene and Department of Malaria Control have each furnished films for our use, and we now have twelve good films. At about half of our moving picture shows we have been able to have a short lecture on public health work. Every county in the State has been visited by the moving picture unit during the past two years, and about half of them have been visited a second time.

### CONSTRUCTIVE WORK.

In addition to school sanitation we have been urging the installation of adequate fire escapes in the schools. Several of the larger towns have voted bonds for sewerage, and others have passed ordinances requiring the erection of sanitary privies which will comply with the regulations of the County Health Department. At homes with records of typhoid fever having existed, the water supplies were analyzed and about three-fifth



found positive to colon bacillus. Nearly 17,000 homes have been visited by members of the Health Departments in the interest of general sanitation.

## MEDICAL EXAMINATION OF SCHOOL CHILDREN.

8,036 school children received a medical examination this year. This number is not as large as last year but 5,776 defects have been corrected this year. A great many of these were discovered last year, but active follow up work this year resulted in this splendid piece of work.

## CONTAGIOUS AND INFECTIOUS DISEASES.

### *Hookworm:*

Three counties had hookworm re-surveys, which showed that hookworm disease had been reduced in these counties. In each of these three counties there was formerly a very heavy infection. The examination of school children between the ages of 6 and 18 now shows an average of 13.6 per cent infection in these counties, and an average reduction of 76.8 per cent. The members of our Health Department seldom see severe cases of this disease which was once so common among rural children.

### *Tuberculosis:*

A large amount of educational work in tuberculosis is being done each year. Our Health Departments have co-operated with the County and State Tuberculosis Associations in putting over their programs. A County Tuberculosis Society has been organized in Darlington with 200 members. In Charleston county the County Health Officer was made Chairman of a committee to agitate a County Tuberculosis Sanatorium. A fifty acre tract of land was given the Tuberculosis Association by City Council and the County Delegation has pledged itself to appropriate \$15,000.00 with which to build the Sanatorium and a like amount for maintenance next year. Two films on tuberculosis are shown by our moving picture department throughout the State. At the free clinics held 533 were examined and 52 positive cases of tuberculosis found. Many of those examined were either suspects or contacts. The positive cases are being followed up and those unable to get in the Sanatorium are receiving regular visits from the County Nurse.

*Typhoid:*

It is with real pride that we point to the fact that the death rate from typhoid fever has been reduced in South Carolina from 35.2 per 100,000 in 1915 to 13.2 per 100,000 in 1923. This is a disease on which we have been hammering for a number of years. 45,782 anti-typhoid inoculations were given by County Health Departments this year. This is nearly three times as many as last year and more than the total given by all County Health Departments in the State for the past five years. Were similar intensive measures taken in every county in the State this disease would disappear in a few years.

*Smallpox:*

This disease continues to crop out and in each instance we find it is brought from counties with no organized Health Departments. It is practically controlled in all counties where Health Departments have existed as long as three years, except for the cases which come in from unvaccinated counties. 12,638 persons have been vaccinated, the majority of these vaccinations being given in the three new counties which put on Health Departments this year. There is no excuse for smallpox in South Carolina. It is the one disease which every man, woman and child in the State knows can be prevented by vaccination, and the State law requiring every school child to be vaccinated should be rigidly enforced.

*Diphtheria:*

3,950 children have been immunized against diphtheria by the administration of toxin anti-toxin. The supply of the serum has long since been exhausted. Thousands of children could have had the advantage of this protection had we been able to secure the serum. We now have requests from every County Health Department for this serum, but are unable to furnish it. We respectfully request that some arrangements be made by which we may secure a sufficient amount of toxin anti-toxin in 1924.

*Venereal Disease:*

Orangeburg County maintains a venereal clinic in connection with the Health Department. 6,141 visits were made to this clinic for treatment or advice. 569 specimens were collected for



Wasserman tests, and 201 of these specimens were found to be positive. 1,090 treatments were given for syphilis and 2,108 for gonorrhea. In the other counties no free clinics are maintained but all indigent cases are given free treatment.

#### *Rabies:*

342 treatments were given to persons bitten by dogs with hydrophobia. Most of these treatments were given at the request of the family physician of the patient.

#### *Malaria:*

A film on Malaria was shown in all malaria infected districts visited by our moving pictures and some drainage work was done in Newberry County.

### INFANT WELFARE WORK.

This work is outlined by the Bureau of Child Hygiene and is carried out in co-operation with this Department. The Infant Welfare Truck visited eight of our counties and 1,339 mothers were instructed and 2,594 infants and young children were examined. 28 midwife classes were organized and 403 midwives instructed. All of these were negroes.

### FREE CLINICS,

A special Eye Clinic was held in Darlington county, at which 293 children were examined. 150 were found to have defective vision and 47 were treated successfully. Tonsil and adenoid clinics were held, at which 211 children were operated on for diseased tonsils and 185 for diseased adenoids. The largest clinic was held in Darlington county, where 105 children had tonsils and adenoids removed.

### DENTAL CLINICS.

Under a separate heading will be found a report of our Director of Dental Clinics. In the counties with County Health Departments 6,507 children were examined, 2,130 children had teeth filled, 611 had teeth cleaned, and 499 had teeth extracted.

## CONCLUSION.

The public conscience is awake to the need for public health work. Of the 46 counties in South Carolina 10 have full-time Health Departments; 8 others have full-time County Health Nurses and 13 counties have full-time dentists. 4 other counties have applied to the Bureau of Child Hygiene for full-time County Health Nurses, and 4 new counties have applied to the Bureau of Rural Sanitation for full-time County Health Departments for 1924. With strengthened sentiment in favor of Rural Health work and the record of achievement of Health Officers, Nurses, and Inspectors engaged in this work, we may hope in a few more years to see a Public Health Organization in every County in South Carolina.

A statistical report is attached.

Respectfully submitted,

L. A. RISER, M. D. In Charge  
Department County Health Work.

## STATISTICAL REPORT FOR THE YEAR 1923.

Department of Rural Sanitation and County Health Work  
South Carolina State Board of Health.

## CONSTRUCTIVE WORK:

Septic tanks installed .....	59
Pits installed .....	930
Buckets installed .....	78
Sewerage installed .....	2
Other types installed .....	13
Homes screened .....	366
Food Handlers inspected .....	168
Meat markets inspected .....	373
Re-sanitations .....	231

## EDUCATIONAL WORK:

Lectures delivered .....	385
Attendance .....	30,939
Moving Picture shows .....	290
Attendance .....	64,102



Talks to school children .....	383
Children present .....	25,061
Clubs organized .....	43
Members enrolled .....	563
Literature distributed .....	83,905
Letters written (office) .....	11,191
Circular letters mailed .....	20,550
Homes visited by Director .....	2,602
Homes visited by Inspector .....	10,415
Homes visited by Nurse .....	3,721
Total homes visited .....	16,738

## LABORATORY WORK:

Examined for hookworm .....	2,229
Infected .....	320
Treated .....	154
Other laboratory work .....	396

## SERA AND VACCINES:

Vaccinations (smallpox) .....	12,638
Vaccinations (whooping cough) .....	291
Inoculations (typhoid fever) .....	51,398
Inoculations (toxin-antitoxin) .....	4,200
Inoculations (anti-toxin) .....	48
Pasteur treatments .....	342

## CONTAGIOUS AND INFECTIOUS DISEASES:

Contagious diseases investigated .....	578
Typhoid cases investigated .....	121
Tuberculosis cases investigated .....	100
Other diseases investigated .....	145

## MEDICAL EXAMINATIONS:

Schools visited .....	552
Schools examined .....	131
Pupils examined .....	8,036
Pupils defective .....	4,023
Defects .....	5,636
Defects corrected .....	5,776

## FREE CLINICS.

## TUBERCULOSIS CLINICS:

Number examined .....	553
Cases found positive .....	52

## TONSIL AND ADENOID CLINICS:

Operated on for diseased tonsils .....	240
Operated on for diseased adenoids .....	215

## DENTAL CLINICS:

Children examined .....	6,507
Children's teeth cleaned .....	611
Children's teeth extracted .....	499
Children's teeth filled .....	2,130

## CHILD WELFARE CLINICS:

Number mothers instructed .....	1,339
Number children examined .....	2,594

## EYE CLINICS:

Children examined .....	293
Defects .....	150
Corrections .....	47

## MIDWIFE CLASSES:

Number classes organized .....	28
Number instructed .....	403

## ANNUAL REPORT OF THE STATE DENTAL CLINICS.

E. A. EARLY, D. D. S., Director.

*To the Director, Department Rural Sanitation and County Health Work, South Carolina State Board of Health.*

Sir: I herewith submit a narrative and statistical report of the work done by the State Dental Clinics for the year 1923:

The State Dental Clinic is a new feature of Public Health Work in South Carolina. The legislature of 1923 appropriated the very small sum of \$2,500.00 to launch this work in the State,



the work coming under the Department of Rural Sanitation and County Health work of the State Board of Health. E. A. Early, D. D. S., was put in charge of the Dental Clinic.

In order to become informed as to the workings of other State Dental Clinics, the Director visited North Carolina and Virginia at the request of Dr. Hayne and Dr. Riser. There he was given reports of the work done in these States, visited some of the clinics, and met different dentists engaged in this work. This instruction was very helpful and some of their outlines have been followed in this State, particularly in regard to the methods in Virginia. The Director also attended the meeting of the North Carolina and Virginia State Dental Societies at Pinehurst, North Carolina. At this meeting Mouth Hygiene was the main feature and the Director gathered valuable instruction as to County Dental Clinics plans.

The Director has attended the following meetings in this State: Fairfield Medical Society, Fifth District Medical Society, State Dental Society, and the Pee Dee Dental Society; at these meetings he spoke on the plan of the State Dental Clinics, and this plan was heartily endorsed by each of these Societies. He also attended the meetings of the South Carolina State Public Health Association and the State Medical Society. The Director has spoken to at least three schools in every county and has addressed Mothers' Clubs, Parents-Teachers Associations, Associated Charities, Teachers' Meetings and Improvement Associations in the interest of the Dental Clinics.

The plan of the State Dental Clinics is to visit every county in the State and every school in each county, doing the work for the children of school age, and children from three to six years of age are urged to be brought to the clinic by their parents for dental treatment. These children are not treated unless the parent is present. A county is required to give a written guarantee of \$600.00 to establish this clinic in that county. The initial expense of the clinic is \$285.00. Of this amount \$250.00 goes for the salary of the Clinician and the \$35.00 goes toward paying the expenses of the clinic. A fee of 50 cents is charged for each treatment and this is pooled in with the \$600.00 and goes out in the payment of the expenses of the clinic. All children not able to pay for the work done can get this work done free, the fee to be taken out of the Dental Clinic fund. This work is

done in each school and in this way all the children in each rural district have an opportunity to have this work done. The \$600.00 is raised through the office of the Superintendent of Education in most of the counties, but in several counties the Parent-Teachers Association, the Associated Charities, Mothers' Clubs and Improvement Associations have helped raise this money. In one county the County Dental Association guaranteed the money. The Dental Societies of each county in which the work is going on have unreservedly endorsed this work; in one county they even pledged themselves not to work on children of school age so that the clinic would get this work. A treasurer is appointed by the County Superintendent of Education to take charge of the fund, it being stated that a responsible person must be appointed. No dentist in charge of a clinic and no member of a County Health Department is allowed to be treasurer of this fund.

At first it was thought to work the schools as they called for the clinic and let each school be responsible for the financial part of the work, but it was seen from the outset that the counties could be worked to a greater advantage. The Director then visited different counties and succeeded in putting clinics in the following counties: Hampton, Marion, Union, Aiken, Dillon, Darlington, Charleston, Cherokee, Florence, Barnwell and Williamsburg. There are six or eight more counties asking for this clinic, and as soon as suitable clinicians can be secured these clinics will be put on. The Director has traveled over 10,000 miles by car and train, in 21 counties over the State in the interest of the Dental Clinics.

The Director feels very much encouraged over the work. The State Dental Clinics have proved that they are going to be a success and it is to be hoped that the State Legislature will give a much larger appropriation this year so that this work may enlarge and in no way be curtailed. Except in one county which had the clinic for only one month, this work has been carried on only two months at the time of this writing. It was deemed advisable to carry on these clinics during the school months until they have become established facts, and then the work can go on the year round. Thus it was that the work of the clinicians did not begin until October 1st. It has kept the Director on the jump, however, getting these clinics established. The following statistical report will testify as to the success of the work.



Examined .....	4,973
Treated .....	4,292
Amalgum fillings .....	4,679
Cement fillings .....	527
Porcelain fillings .....	124
Gutta Percha fillings .....	10
Cleanings .....	2,091
Extractions .....	1,257
Amount collected from pay pupils .....	\$3,750.40
Number of free pupils treated .....	217
Amount collected from free pupils .....	\$ 450.15
Total amount collected .....	\$4,200.55
Total number operations .....	8,688.00

Respectfully submitted,

E. A. EARLY, D. D. S.,  
Director Dental Clinics.

## THE BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING.

### I. ADMINISTRATION.

#### PERSONNEL.

Director, salary paid by State, supplemented by Metropolitan Life Insurance Company.

Two District Supervisors, salaries paid by State, supplemented by Southern Division, A. R. C.

Consultant Pediatrist, (part time), salary paid by Federal funds.

Midwife Supervisor, salary paid by State (Maternity-Infancy program).

Field Nurse for Maternity and Infancy work, salary paid by State.

Maternity-Infancy Nurse, Charleston, to develop prenatal work, salary paid by Federal funds.

Nutritionist, Greenville, salary paid by Federal funds. (Maternity-Infancy program).

Negro Field Nurse, salary paid by Mission Board of M. E. Church, South; travel paid by Federal funds. (Maternity-Infancy program).

Three Assistant field nurses, expenses paid by Federal funds.

Secretary to Director, salary paid by Federal funds.

Secretary to Staff, salary paid by State and Federal funds.

Clerk supplied to Bureau of Vital Statistics, salary paid by Federal funds.

One Mechanician (for Child Health Truck), salary paid by Federal funds.

One Special Accountant, salary paid by Federal funds.

The Director of the Bureau is responsible to the State Health Officer for the administration of the entire department.

Each district supervisor has under her direction the county nurses, community nurses, Metropolitan nurses and industrial nurses, who affiliate with the Bureau. Those who do not affiliate work under the direction of the organization employing them.

The Consultant pediatricist is a member of the Advisory Board of Pediatricists, selected from various county and state medical societies. He addresses public meetings, answers letters from mothers and conducts infancy and pre-school child conferences.

The Midwife Supervisor supervises all midwives who have certificates from the State Board of Health, calling together the classes previously instructed twice a year to inspect their equipment and give them a review on their work. She also instructs new classes of midwives in unorganized counties when invited to do so by the county medical society.

The Field Nurse (Maternity-Infancy program) instructs classes in midwifery and home nursing in unorganized counties during a part of the year and has charge of the Child Health Truck during the remainder of the year.

The Infancy-Maternity Nurse in Charleston is working in connection with the Prenatal Clinic in Roper Hospital. She is doing instructive work and giving bedside care.

The Nutritionist is assisting the Health Officer in Greenville to establish a laboratory for preparing milk and other foods for infants and young children according to doctors' prescriptions.

The Negro Field Nurse demonstrates health work among the negroes through midwifery and home nursing classes and school inspection. She has worked in Greer and Hartsville and in Allendale, Charleston and Lee Counties during the year. She has instructed and given certificates to 403 midwives and 186



members of home nursing classes and organized a tonsil and adenoid clinic at which 22 negro children were operated.

### *Activities:*

The Bureau of Child Hygiene promotes its Health Program through county, municipal and industrial nursing services and through its own staff of field nurses who do largely maternity-infancy work.

The year 1923 began with 46 nurses on duty and only 28 nursing services and there were many resignations during the first months of the year. Since the middle of April all vacancies have been filled and some new services established. There are now 33 nursing services with 54 nurses on duty, working under the direction of this Bureau.

### NEW WORK UNDERTAKEN BY THE BUREAU.

The Child Health Truck was added to the equipment of the Bureau in March. It was purchased from the Babies' Dispensary of Cleveland, Ohio, put into perfect condition and equipped at a cost slightly below \$1500.00. It was sent out on the 16th of April and continued on the road until the 2nd of November. Thirty counties were visited and 6,000 children under seven years of age examined. The personnel of the Truck consisted of the Field Nurse in charge, an assistant nurse and a mechanic. The medical examinations of the children were made by local physicians, except on the final day in each county when Dr. Cornell, state pediatrician, and Dr. W. A. Boyd, orthopedist, were usually present to examine special cases selected by the local physicians from previous conferences. The largest number of children examined as in Aiken County, 554 in two weeks, but Saluda County held the record as 500 were examined there in one week and the medical men of the county were most interested and co-operative.

Assistance in holding Child Health Conferences in communities not visited by the Truck, was given by furnishing doctors and nurses from this department.

During the year assistance in organizing and conducting tonsil and adenoid clinics was furnished to four communities: Garnett, Cheraw, Saluda and Allendale. In Allendale two clinics were held, one for white and one for negro children.

During the first part of the year, the funds which took care of the negro nurse in Chester were exhausted and Hagar Middleton, the nurse, was taken on as a Sheppard-Towner nurse to do full time maternity and infancy work during April, May and June. She was continued as a midwife instructor during September and October and was taken on the staff of the Charleston County Unit on November 1st.

After a conference with the Director of the Children's Bureau in Washington, it was decided that instead of matching money from the Charleston Nursing Association, a maternity-infancy nurse should be employed directly by this Bureau to help develop the prenatal clinic at Roper Hospital, working in very close co-operation with the nursing association, but under direct supervision from this department. The work has developed very well during the few months the clinic has been in operation.

In May the assistance of this department was requested by Dr. Smith, Health Officer, of Greenville, in establishing some sort of nutrition work in Greenville. A nutritionist was provided for eight months for this work. She has prepared foods for infants and young children on doctors' prescriptions and has taught many mothers food preparation. All parents who can do so pay for the foods prepared, but in some cases they are furnished free. The work of food laboratory has grown rapidly and it is hoped that the undertaking will be soon self-supporting. The plan is to establish, by the co-operation of local pediatricists, a feeding clinic in connection with the laboratory.

In addition to the work done by the Truck, field nurses have put on educational programs in four counties: Richland, Horry, Abbeville and Barnwell Counties, and arrangements have just been made to begin work in Sumter County. Each group of midwives instructed during the last eighteen months has been re-visited once or twice during the year by the midwives supervisor. As a result of this work and that of other departments a number of counties are very much interested in putting on a nursing service and are planning for an appropriation for the coming year.

It has been the policy of the Bureau to respond to all reasonable (and some unreasonable) requests for aid and nurses have been sent out a number of times to assist with examination of school children.



### *Education of Nurses:*

Because of the shortage of public health nurses, a scheme was worked out by the department to train South Carolina nurses for public health positions in South Carolina. The Red Cross and the National Organization gave their approval. Two nurses have been trained and placed in counties and a third one has almost completed the course and there are two more ready to begin the training in January. The course consists of one month with the Child Health Truck, one month with the mid-wife and home nursing instructor, one month with a county nurse, two weeks of lectures and two weeks in helping organize committees and clinics. No certificate is given, but the National Organization for Public Health Nursing, through its Educational Secretary, has warmly commended the plan as suitable to many states where there is no University nursing course.

## II. EDUCATIONAL WORK.

The work of the Bureau has included in addition to the general field work, an educational program.

The administrative staff has addressed 60 meetings during the year with an approximate attendance of 5,000 people. This included a lecture on "Prenatal Care" given by the Director to farm women at the short course at Winthrop, which was received with the greatest interest.

The Bureau has distributed 24,505 pieces of literature and answered many letters from mothers.

Four new films have been purchased and have been shown by the moving picture operator employed by the Bureau of Rural Sanitation. In all 398 films have been shown at 243 performances with an attendance of 47,500.

### *Exhibits:*

A large number of exhibits have been shown during the year. "Healthland" was on display in Van Metre's window during Milk Campaign week, and at the University Gymnasium as part of the exhibit of health and social work during the Teachers' Institute. It was also sent to the Lee County Fair.

The "Health Garden" was the special exhibit of the Bureau at the State Fair and slides illustrating infant care and feeding

were borrowed from the Children's Bureau for use in the attractascope. The "Health Garden" was sent to the Chester and Newberry County Fairs, also.

Many other counties were given assistance in some health exhibit, by material and nurses.

Local nurses report the following:

### SUMMARY OF FIELD WORK FOR THE YEAR ENDING NOVEMBER 30, 1923.

#### VISITS:

Total number of visits .....	43369
Nursing .....	14630
Instructive .....	18389
School .....	2632
Social service .....	2549
Conference .....	3881
Sanitation inspection .....	1288

#### SPECIMENS COLLECTED:

Urine .....	190
Feces .....	671
Sputum .....	78

#### MEDICAL INSPECTION:

Schools inspected .....	634
Pupils inspected .....	31816
Pre-school age inspected .....	516
Total number inspected .....	*32966
Defectives .....	8310
Total defects .....	18545
Defective eyes .....	1482
Defective ears .....	515
Defective nose and throat .....	5914
Defective teeth .....	7493
Defective, miscellaneous, .....	3141
Follow-up visits .....	774

#### TUBERCULOSIS:

Home visits to diagnosed cases .....	1527
Home visits to suspects .....	888



Total visits	2415
Cases sent to sanatorium	130
Clinics held	140
Cases treated at clinic	589
Examinations secured by nurses	480
Cases found positive	150

## CHILD WELFARE:

Prenatal visits	2381
Postnatal visits	2633
Visits to infants under two years	5220
Baby conferences	401
Babies examined at conferences	7179
Visits to Pre-school children	424

\*Of this number 9019 were examined by health officers, assisted by nurses.

## EDUCATIONAL:

Talks to school children	902
Attendance	38887
Talks to public meetings	236
Attendance	8399
Talks to club meetings	25
Attendance	1004
Home nursing classes	439
Attendance	5881
Certificates given	277
Midwives enrolled	2365
Classes held	429
Certificates given	603
Local committees organized	20
Professional services enlisted	30
Little Mothers Leagues organized	10
Attendance	370
Exhibits held	29
*Literature distributed	30426

## CORRECTIONS AND TREATMENTS:

Dental treatments	1956
Eye treatments	316
Eye corrections	116

Throat treatments .....	248
T. and A. operations .....	652
Vaccinations .....	10299
Anti-typhoid treatments .....	10731
Ortheopœdic cases treated .....	4
Cultures taken .....	582
Toxin-antitoxin given .....	691
Other treatments .....	2461
Clinics held .....	158
Treatments in clinics .....	1606

#### CLASSIFICATION OF PATIENTS:

New cases during the year .....	6160
Prenatal .....	733
Postnatal .....	277
Infants under two years .....	829
Tuberculosis .....	281
Typhoid .....	132
Other common diseases .....	1450
Surgical .....	551
Medical .....	1907
Patients discharged .....	4388
Recovered .....	2292
Improved .....	1043
To hospital .....	229
Dead .....	163
To other care .....	661
*Moving picture reels shown .....	398
Attendance .....	51675

ADA TAYLOR GRAHAM.

### ANNUAL REPORT OF SOUTH CAROLINA AND PALMETTO SANATORIA.

State Park, S. C., December 1 1923.

*To the Chairman and Members of the Executive Committee of  
the State Board of Health of South Carolina.*

Gentlemen: I have the honor of submitting the ninth annual report of the South Carolina Sanatorium for the year ending November 30, 1923.



During the year 110 white patients have been received. Of these, on admission, the classification was minimal or incipient, 2; moderately advanced, 43; far advanced, 45. Seventy-two were discharged as follows: non-tuberculous, 2; improved, 38; quiescent, 14; unimproved, 16; not classified, 2. There were 22 deaths. The following tuberculous complications occurred: laryngitis, 10; cervical adenitis, 2; hemorrhage, 21; Pott's Disease, 1; hip disease, 1. Non-tuberculous complications were, pregnancy, 1; syphilis, 1; bronchial asthma, 2; phlebitis, 1; pellagra, 3; uncinriasis, 1. Of the 76 patients present, 51 are moderately advanced and 25 are far advanced. 37 patients gained an average of  $10\frac{1}{4}$  pounds each; 5 lost an average of  $6\frac{2}{5}$  pounds and 30 were not weighed as they were progressive cases confined to bed. Of those now resident, 48 have gained an average of  $10\frac{1}{2}$  pounds each; 8 have lost an average of  $10\frac{5}{8}$  pounds each; 20 have not been weighed regularly. The number of hospital days for white patients is 25,382.

At the Palmetto Sanatorium for negroes, 51 have been admitted and 51 discharged. Of those discharged the classification was, moderately advanced, 7; far advanced, 42; non-tuberculous, 2. The condition on discharge was—quiescent, 1; improved, 8; while 33 died. Of those now resident the classification is, 1 incipient, 11 moderately advanced; 9 far advanced; cervical glands, 1.

The following tuberculous complications have occurred among the negroes: laryngitis, 6; hemorrhage, 5; cervical adenitis, 2; Pott's Disease, 1; Non-tuberculous complications were, syphilis, 1; bronchial asthma, 2; brain abscess, 1.

The total number of hospital days for negroes is 7,182.

The citation above shows a marked increase in the number of far advanced patients admitted and a corresponding increase in the number of deaths. The number of deaths among white patients for 1923 is nearly four times that of 1922.

Co-operating with the State Tuberculosis Association and County Health Officers, tuberculosis clinics were held by my assistant, Dr. J. C. Bonner, as follows:

At Anderson—April 10, 11, 12; North, June 7; Orangeburg, June 21; Holly Hill, June 22; Bishopville, July 24; Lancaster, August 2, 3; Darlington and Hartsville, September 26, 27, 28;

Sumter, Oswego, Pinewood, October 9, 10, 11; Anderson, Belton, Honea Path, Iva, October 17, 18, 19, 20; Sumter and Mayesville November 6, 7.

I assisted with clinics at the following: Sumter, May 21, 22, 23, 24, 25; June 18, 19, 20; July 24, 25; Abbeville, July 11, 12; Newberry, September 24; Whitmire, September 25.

The farm and dairy have produced a part of the vegetables needed and all of the milk used. The past year has shown rather favorable results. For the first time the 20-ton silo was more than filled and 10 tons of hay were cured. Pork to the amount of 2810 pounds; beef and veal, 835 pounds; mutton or goat, 381 pounds; Irish potatoes, 55 bushels; sweet potatoes, 177 bushels; green corn, 910 dozen; watermelons, 307; string beans, 76 bushels; cucumbers, 38 bushels; squash, 17½ bushels; onions, 32 bushels; Lima beans, 13 bushels; cantaloupes, rape, spinach, mustard as needed.

Religious services have been conducted regularly by the Billy Sunday Club of Columbia every Monday night. Ministers from the Churches and students from the Lutheran Theological Seminary have held services and conducted a Sunday School class.

There was no special appropriation for improvements, so no new buildings have been built. Repairs have been made as far as was thought advisable and the Palmetto Sanatorium painted on the outside. The diet kitchen of the South Carolina Sanatorium was equipped with an electric stove. Electric heaters have been provided for bath rooms, examining room and isolation rooms in the Infirmary. A new coal range has been placed in the general kitchen.

As a further protection against fire, small structures have been built over each fire plug; the hose attached to the plug and arranged upon a shelf. In case of fire all that is necessary is to pull out the hose and turn on the water. We will need additional hose and nozzle to supply each fire plug in this way.

Our needs may be summarized as follows:

1. An infirmary for women.
2. Buildings for nurses.
3. Buildings for children.
4. Refrigerating plant.



5. Home for superintendent.
6. Servants houses.
7. Central heating plant.
8. Amusement hall.
9. Silo.
10. Sheds for cattle.

I wish to thank you for your support and kind consideration, and my assistants for their co-operation during the past year.

Respectfully submitted,  
(Signed) ERNEST COOPER, Superintendent

## REPORT OF THE FIELD SECRETARY OF THE SOUTH CAROLINA SANATORIUM.

As the present Field Secretary took over the work in the middle of the year she has adhered to Mrs. McDonald's program. Free clinics were held in 9 counties with Drs. Cooper and Bonner as directing specialists. These have been well received and have been productive of excellent results but it would seem wise that arrangements should be made for the employing of a director. Drs. Cooper and Bonner have responded most readily whenever it was possible, but owing to the pressure of their work at the Sanatorium their co-operation in the clinic work has been given at great personal inconvenience, and the number of clinics has been necessarily limited by the demands on the time of these two specialists.

Circular letters have again been sent out to leading physicians, members of women's clubs, Church societies, tuberculosis committees, health officers and nurses, asking their co-operation in locating tuberculosis patients and in caring for those for whom provision could not be made at the State Sanatorium.

The legislature having failed to make provision for the building asked for in 1923, the matter was again presented to the Federation of Women's Clubs, and was again made a part of their health program for the year 1923 and as such was discussed by special speakers at the six district meetings; it was also made apart of the legislative program of the League of Women Voters and endorsed by the Legislative Council of Women's Organizations. The following new buildings have been advocated for the 1924 program: a new infirmary for women in order that

the present one might be used exclusively for men; an new home of the bungalow type for the superintendent in order that the present building might be used as a nurses' home; some buildings to house the colored help employed at the Sanatorium; totalling \$47,000.

The Tuberculosis Committee in Charleston County were assisted by the Field Secretary in their effort to secure a County Sanatorium; at the request of Dr. Banov two addresses were made in Charleston and other work done. The Sanatorium for this county is now assured.

Educational literature has been distributed at twelve conventions or state meetings; has been sent to every county in the state and has been enclosed in a large number of the letters going out from this office. Publicity has been secured in The State, The Record, The News and Courier and in practically every county paper in the state. The Secretary has spoken of the Sanatorium and its work before 22 organizations and clubs in 15 different counties and has secured the co-operation of 7 churches in the city of Columbia in the matter of friendly visiting at the Sanatorium and in looking after the needs of those patients needing assistance.

Collections were made to the amount of \$3,563, from individuals and organizations for specific purposes and from the counties which make appropriations for the care of indigent patients. Special effort has been made to establish personal contact with the individual patients to the end that more efficient follow up work may be done after the patients leave the Sanatorium; over 200 visits have been paid to the Sanatorium. During the coming year it is hoped to put the follow up work on a more definite basis, but in order that this may be done it will be necessary to provide some stenographic help, as there is at present none provided either for the Superintendent or for the Field Secretary.

I would suggest for the coming year:

1. That the plan for a central heating for all buildings should be looked into, with the idea of including a laundry in the same building.
2. That some provision be made for a ward for children.



3. That a landscape gardener be secured to lay out plans for the permanent improvement of the grounds and that a small sum be provided each year to carry out a portion of such plans, that in the end we may have suitable and attractive surroundings for the Sanatorium.

Respectfully submitted,

ISABELLE LINDSAY CAIN,  
Field Secretary.

## FIFTH ANNUAL REPORT—STATE SANITARY ENGINEER—1923.

*To the Chairman and Members of The Executive Committee  
South Carolina State Board of Health.*

Gentlemen: In attempting to sum up in a few words the work of an entire year, the task of placing concrete accomplishments before you presents itself. Routine work with the public officials in charge of water supplies has been carried on thru personal visits, letters and the mimeographed monthly letter called "Sewat." This little paper has won its place in the hearts of the waterworks superintendents and it is gratifying to note the response it has brought forth. Thru this little sheet, the position of the State Board of Health has been brought to the attention of these men and they do not hesitate to call upon the Board now when problems present themselves. In the past—the State Board of Health was some distant, intangible organization—now they know when they call upon it—a ready response will be found. Of course our main effort is to keep the public water supplies in such condition that they will not need corrective measures and I am proud to state that in the past year no illness traceable to public water supplies has been discovered in this state. I will try to keep this record in the future but more extensive work on my part is impossible with the present appropriations. During the past year, several cities have felt the pinch of insufficient water supply and one city when about out of water called upon us for aid. Our emergency chlorinator—loaned to us by the manufacturers of this equipment—was rushed to the scene—a small stream impounded and the chlorinator installed ready to treat the creek water with a heavy dose of chlorine before pumping it to the city mains. A hurried survey

of the water shed was made and several privies removed from the stream and a slaughter house drain removed. We were ready to put the creek water into the mains. A practical test of the efficiency of the chlorine was made by the undersigned drinking some of the creek water after it had been chlorinated. No ill effects were suffered. Provident rains however relieved the tenseness of the situation and our chlorinator stood by in readiness for several weeks until the city could purchase one. The city and county health departments co-operated in cleaning up the water shed. At one of the institution for higher learning in this state—several cases of typhoid and an analysis of one of the wells showing contamination—led the officials to believe that the water supply was the method of transmission. A hurried trip thru the country—an inspection—and investigation confirmed the belief that the water supply was NOT the agency of transmission. Here again chlorine was put on the supply as an emergency protective measure. In Columbia a slight epidemic of typhoid was thought to be traceable to water but upon investigation the water supply was completely exonerated. In many other cases the undersigned has been called in to consult with the town officials regarding auxiliary supplies or new sources of supply. In this connection may be mentioned the cities of Rock Hill, Clinton, Newberry Andrews, Lynn (formerly Duncan, S. C.) Ridgeway, Spartanburg, Florence. Institution water supplies have been inspected at Winthrop, Clemson, DeLaHowe and all the institutions under the State Board of Public Welfare. An inspection of Shivar Springs was also made and the water supplies of the county schools of Marion County gone over. Our usual inspection and certification of Railway Water Supplies in co-operation with the United State Public Health Service has been carried out during the past year.

Another field of endeavor has been along the lines of sewage disposal. Following the passing of a regulation requiring plans to be submitted to the State Board of Health for all sewerage systems and sewage disposal plants before construction started—numerous cities have submitted projects. We mention offhand the following, Ridgeway, Lamar, Andrews, Lyman, Arcadia Mill, Gaffney, Lake City, Clover. Stream pollution is becoming a serious problem for several towns are being forced to go to streams for their water supply and in at least one case—the logical stream



is contaminated by sewage from two other towns. This brings up the question should the state require one city to purify its sewage before discharge into a stream if a city further down stream desires to take its raw water supply from this stream. Of course the method of water purification would be the same even if no sewage were being emptied into the stream. In one case a city has been improperly disposing of its sewage for some years and an inspection obtained the promise of the officials that it would be corrected. An inspection of Saluda, S. C., was made in the interests of better sewage disposal and led to the starting of health work in that town. Inman has submitted proposed plans and I have co-operated with local officials in promoting water works and sewerage systems here and at Pageland. Rural conditions have received attention by work with the various county health officers and nurses at their schools, etc. Marion, Darlington, Cherokee and Aiken have been assisted. A new bulletin on the Pit Privy will be gotten out before the first of the year it is hoped. Near Columbia quite a few of new type pit privies were installed in the small outbreak of typhoid that occurred here.

With regards to swimming pools—the largest project was the pond in Cleveland Park, Spartanburg, which was inspected and condemned by the writer in co-operation with Dr. Hayden, Epidemiologist and the local officials. At Greer—the Legion pool was inspected and suggestions made for its betterment. Various State institutions have been inspected and reported upon this year. A survey usually covers the following points—Water Supply, Sewerage and Sewage Disposal, Food and Food Handling, Milk, Housing Conditions, Construction of Buildings, Fire Protection. Inspection were made at DeLaHowe, State College at Orangeburg, State Hospital for the Insane, the Penitentiary, re-inspection of Clemson and inspection of all the institutions under the control of the Board of Public Welfare. Inspection trips have also been made to Thornwell Orphanage and the Economy Home. The Annual Budget for the Legislature was prepared this year as usual. Assistance has been rendered the State Department of Agriculture in their factory inspection work. Small hypochlorite plants have been designed for small water plants in this state. A small outbreak of typhoid at Clinton Mill was investigated.

In conclusion, I wish to state that any work accomplished has been thru the co-operation of the various city officials and the co-workers in preventative medicine. The work has been scattered in every county of South Carolina with the exception of Berkeley. To keep up the record of no waterborne typhoid typhoid fever of epidemic nature—a steady hammering away at those in responsible charge will have to be maintained and little by little we will have our supplies in shape that all the safeguards known to the profession will be present and in active service.

Respectfully submitted

E. L. FILBY, C. E.  
State Sanitary Engineer.

## REPORT OF STATE HOTEL INSPECTOR.

December 18th, 1923.

*Honorable Hobert Wilson, Chairman, and Members of the Executive Committee State Board of Health.*

Gentlemen: I beg to submit herewith the following as my report on the Hotel Inspection during the year now closing.

This year has been the best year since we started the work four years ago. We have seen more progress along good Hotel lines than any previous year. We have gone about the State making regular inspection continuously during the year, investigating all complaints as soon as they were recieved and endeavoring in all cases to rectify the cause of the complaint without working any undue hardship upon any one concerned. We have had three new Hotels to open up during the year. The Franklin at Spartanburg, The Wareshoals Inn at Ware Shoals, and the Manning at Manning. All of these are modern in every particular and are run on an up to date and very satisfactory plane.

Two new modern hotels are nearing completion at Charleston, and when completed will be the equal of any in the South. They will fill a long felt need. Campaigns have been launched at Union, Georgetown and Greenville for new hotels. All of these are needed and we feel confident that during the coming year we shall see new modern hotels at each of these places.

Taking it as a whole the conditions are good, only two places will possibly have to be ordered closed, these are at Westminster



and at Woodruff. Both of these places are small and the patronage hardly warrants the working over and converting into new hotels. This report will be supplemented by the addition of the scores of the hotels after December 31.

Respectfully submitted,

J. H. WOODWARD.

## SCORES OF THE HOTELS IN SOUTH CAROLINA FOR 1923.

Name of Hotel	Town	Score
Eureka	Abbeville	875
Plaza	Anderson	960
Salla	Anderson	750
Anderson	Andrews	700
Keith Onida	Andrews	800
Aiken Inn	Aiken	840
Aiken	Aiken	860
Gildare	Allendale	850
Cleveland	Allendale	850
Diamond	Barnwell	900
Shamrock	Blackville	950
Visitors Home	Beaufort	910
River View	Beaufort	870
The Tucker Inn	Beaufort	925
Bethune	Bethune	725
St. Charles	Branchville	600
Bowman	Bowman	800
Evason	Bennettsville	900
Mayflower Inn	Bamberg	900
Commercial	Batesburg	875
Batesburg	Batesburg	965
Betlon	Belton	775
Gettys	Blacksburg	800
Pioneer	Bishopville	925
New Commercial	Bishopville	920
Grace	Conway	910
Kinston	Conway	890
Clinton	Clinton	875
New Clio	Clio	750
Jefferson	Columbia	990
Jerome	Columbia	975
Imperial	Columbia	950
Gresham	Columbia	975
St. John	Columbia	875
Colonia	Columbia	800
Marmac	Columbia	930
Central	Columbia	600
McLean	Columbia	750
Terminal	Columbia	500
Desota	Columbia	980
The New Charleston	Charleston	950
St. John	Charleston	936
Argyle	Charleston	938
Timrod Inn	Charleston	940
America	Charleston	930
Myers	Chester	840
Carolina Inn	Chester	875
Chester Hotel	Chester	800
Carlisle	Carlisle	725
Covington	Cheraw	900
Raynard	Cheraw	875
Camden	Camden	900
Commercial	Camden	900
Park View Inn	Camden	900
Rail Road Hotel	Central	600
The Worsham Inn	Central	950
McFall	Darlington	990
Darlington	Darlington	820
Denmark	Denmark	920
Due West	Due West	750
Wheeler	Dillon	840
Berry	Elloree	800
New Dixie Highway	Edgefield	900
Mountain View	Easley	850
Estill	Estill	800
Fairfax	Fairfax	845
New Hotel	Fairfax	900
Park	Fort Mill	750
Florence	Florence	850
Central	Florence	800
Pee Dee	Florence	800
Dickman House	Florence	900
Fountain Inn	Fountain Inn	700
Imperial	Greenville	975
Ottarray	Greenville	970
Wilson	Greenville	600
Alexandria	Greenville	800



Name of Hotel	Town	Score
Piedmont	Greenville	650
Cason	Greenville	600
New Commercial	Greenville	650
Washington	Greenville	850
Oregon	Greenwood	980
Greenwood	Greenwood	800
Travelers	Greenwood	750
Moreland	Greenwood	900
Gladstone	Georgetown	850
Tourist	Georgetown	850
Winyah	Georgetown	800
Dearborn Inn	Great Falls	930
Carroll	Gaffney	960
Mixon	Hampton	750
Holly Hill	Holly Hill	800
Travelers	Holly Hill	750
Arcade	Hartsville	985
Hatchett	Inman	800
Johnston Inn	Johnston	900
Enterprise	Jonesville	650
Benton	Kershaw	800
Royal	Lancaster	950
Kingstree	Kingstree	925
Palmetto	Lake View	925
Bilt More	Lake City	850
Drafts	Lexington	875
Laurens	Laurens	800
Latta	Latta	750
Baggott	Lanes	875
Lockhart	Lockhart	800
Lamar	Lamar	800
Imperial	Landrum	800
Youngs	Marion	850
Jenkins	Marion	700
Hampton	McBee	700
Kirkland	McColl	760
Manning	Manning	960
Kineen	Mayesville	840
Vaughn	Mullins	960
Katurah	McCormick	840
McCormick	McCormick	750
National	Newberry	875
Newberry	Newberry	900
Neeses	Neeses	800
Sherard	Ninety Six	800
Nichols	Nichols	750
Kirkland	Norway	800
Orangeburg	Orangeburg	855
St. Joseph	Orangeburg	855
Pickens Inn	Pickens	850
Old Hickory Inn	Pickens	800
Wise	Prosperity	750
Antrim	Pelzer	800
Piedmont	Piedmont	800
Pacolet	Pacolet	900
Pamplico	Pamplico	700
Blackwell	Pageland	800
Blakeney	Pageland	500
Carolina	Rock Hill	875
Anderson Motor Company	Rock Hill	750
Ridgeway	Ridgeway	800
Sycamore	Ridgeland	875
Lipman	Ridgeland	700
Sawyers	Ridge Springs	800
Cleveland	Spartanburg	990
Gresham	Spartanburg	987
Franklyn	Spartanburg	990
Spartan	Spartanburg	800
Clinchfield	Spartanburg	880
Piedmont	Spartanburg	650
Jackson	Spartanburg	600
Imperial	Sumter	900
Claremont	Sumter	900
Squirrel Inn	Summerville	960
Oconee Inn	Seneca	893
Palmetto	Seneca	800
Commercial	Springfield	850
Springfield	Springfield	750
Calhoun	St. Matthews	860

Name of Hotel	Town	Score
Hartzog .....	St. George .....	825
Saluda .....	Saluda .....	800
Timmons ville .....	Timmons ville .....	600
Union .....	Union .....	600
Edisto .....	Wagener .....	600
Alexander .....	Walhalla .....	925
Gilreath .....	Westminster .....	500
Whitmire .....	Whitmire .....	780
Williston .....	Williston .....	960
Albert .....	Walterboro .....	800
Palmetto Inn .....	Walterboro .....	800
Ware Shoals .....	Ware Shoals .....	960
Winnsboro .....	Winnsboro .....	800
Shandon .....	York .....	825
Summer Resorts.		
Big Springs .....	Big Springs .....	920
Glenn Springs .....	Glenn Springs .....	800
Ceasars Head .....	Ceasars Head .....	900
Valley View .....	R. D. Marietta .....	850
Myrtle Beach .....	Myrtle Beach .....	850
Atlantic Beach .....	Sullivans Island .....	900
Winter Resorts.		
Highland Park .....	Aiken .....	980
Wilcox's .....	Aiken .....	950
Palmetto Inn .....	Aiken .....	900
Jordan Inn .....	R. D. Monetta .....	950
Villa Marguierita .....	Charleston .....	980
Court Inn .....	Camden .....	900
Hobkirk Inn .....	Camden .....	980
Kirkwood .....	Camden .....	985
Pine Forest Inn .....	Summerville .....	980
Carolina Inn .....	Summerville .....	980
Big Springs .....	Big Springs .....	920

## REPORT OF CHEMIST AND BACTERIOLOGIST.

*To the Chairman and Members of the Executive Committee of the State Board of Health.*

Gentleman: I have the honor to submit the following tabulated report of sanitary chemical and bacterial analysis of samples of water from the public water supplies of South Carolina, made under the direction of the State Board of Health, in accordance with law relating to the purity of water supplies, 1 Code, Section 1599; and of information as to officials of local boards of health and plants, source, capacity, discharge of sewage and disposition of garbage.

In addition to analyses of water from towns and cities, chemical and bacterial analyses have been made of the waters, from eighty-eight (88) industrial plants, and four (4) bottling plants.

From thirty-five (35) supplies the samples first received showed either presumptive chemical or bacterial indications of contamination. In each of these cases check samples were called for, and directions were given regarding the inspection and regulation of the supplies, and analyses continued until supplies



were regulated, and the water found to be free from contamination.

The contamination continued to persist in six wells. The use of these wells was discontinued, and the six wells were filled with earth to prevent any further use of them.

Six miscellaneous samples were received for chemical analysis. One of these was found to be contaminated.

A grand total of 701 chemical analyses, and 802 bacterial analyses were made during the year.

Very respectfully,

FRANCIS PARKER, M. D.

### Water Supply of Abbeville, S. C.

Abbeville Water & Electric Plant. Owned by city. Superintendent, J. T. Robertson. In charge of collection of samples, J. T. Robertson. Chairman of local Board of Health, Dr. J. R. Power.  
 Source: Creek 1.3 miles from city. Capacity, 500,000 gallons per day; filtered by mechanical filter. Treatment, one-half grain alum per gallon. Capacity of plant, 500,000 gallons per day. Average consumption, 200,000 gallons per capita, 40 gallons per day. Consumption per capita, 40 gallons per day. Service metered. Sixty per cent of residence using city supply.  
 Sewerage system: Sixty per cent of city seweraged and having water closets. Sewerage empties into creek. No garbage disposal plant. Garbage dumped in old fields and gullies.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrites.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 28, 1923 .....	5.00	6.00	0.01	0.01	0.00	0.00	140.00	Negative	Negative
June 11, 1923 .....	5.00	7.00	0.01	0.02	0.00	0.00	100.00	Negative	Negative
September 13, 1923 .....	5.00	7.00	0.01	0.01	0.00	0.10	105.00	Negative	Negative
December 7, 1923 .....	5.00	7.00	0.01	0.01	0.00	0.10	95.00	Negative	Negative

### Water Supply of Aiken, S. C.

City Water Works. Superintendent, H. Sudlow. In charge of collection of samples, H. Busch. Chairman of Local Board of Health, Dr. H. T. Hall.  
 Source: Collection of Springs, 6 1/2 miles from city. Capacity, 2,000,000 gallons per day, not filtered. Capacity of plant, pumpage 1,500,000 gallons per day. Average consumption, 350,000 gallons per day. Consumption per capita, 80 gallons per day. One hundred per cent of city using city water supply.  
 Sewerage system: Seventy five per cent of city sewered. 50 per cent of buildings connected with sewer and have water closets. Sand filter beds. Sewerage empties into small streams. No garbage disposal plant.

March 17, 1923 .....	5.00	6.00	0.02	0.03	0.05	0.10	20.00	Negative	Negative
June 11, 1923 .....	5.00	6.00	0.02	0.01	0.01	0.20	60.00	Negative	Negative
September 10, 1923 .....	5.00	6.00	0.01	0.01	0.00	0.10	77.00	Negative	Negative
December 18, 1923 .....	5.00	7.00	0.01	0.01	0.005	0.20	65.00	Negative	Negative



## Water Supply of Allendale, S. C.

Allendale Light & Water Plant. Owned by town. Superintendent, J. W. Mallard. In charge of collection of samples, J. W. Mallard. Chairman of Local Board of Health, Dr. J. E. Warnock.

Source: Deep well, 72 feet deep, 8 inches in diameter, near the center of town; not filtered. Capacity, 240,000 gallons per day. Average consumption 60,000 gallons per day. Consumption per capita, 34 gallons per day. Sixty per cent of service metered. Eighty eight per cent of residences using city water supply. Fifty eight per cent of buildings connected with sewer and have water closets. Septic tank and sprinkling filter. Sewerage empties into Cosawatchie River. No garbage disposal plant. Garbage dumped in open fields one and a half miles from city and burned.

March 15, 1923 .....	5.00	6.00	0.02	0.02	0.00	0.00	198.00	Negative
June 5, 1923 .....	5.00	5.00	0.01	0.03	0.00	0.00	202.00	Negative
September 13, 1923 .....	5.00	6.00	0.01	0.01	0.00	0.00	101.00	Negative
December 8, 1923 .....	5.00	7.00	0.01	0.01	0.00	0.00	161.00	Negative

## Water Supply of Anderson, S. C.

Southern Public Utilities Co. Manager, H. A. Orr. In charge of collection of samples, R. L. Swittenberg. Chairman of Local Board of Health, Dr. J. O. Sanders.

Source: Bailey's Creek, two miles, and Rocky River three miles from city. Capacity 20,000,000 gallons per day. Filtered by mechanical filter. Treatment one-half grain of alum per gallon. Capacity of plant 2,500,000 gallons per day. Consumption per capita 50 gallons per day. Service metered. Ninety five per cent of buildings use city water supply. Sewerage system: Ninety three per cent of city sewered. No sewerage disposal plant. Sewerage empties into Rocky River and Generoslee Creek.

March 13, 1923 .....	5.00	5.00	0.01	0.02	0.00	0.10	83.00	Negative
June 8, 1923 .....	5.00	6.00	0.02	0.03	0.00	0.10	115.00	Negative
September 5, 1923 .....	5.00	7.00	0.02	0.01	0.00	0.10	48.00	Negative
December 12, 1923 .....	10.00	5.00	0.01	0.01	0.00	0.10	95.00	Negative

## Water Supply of Bamberg, S. C.

Light, Water and Power Plant. Owned by City. Under Board of Public Works Department. Superintendent, L. P. Tobin. In charge of collection of samples, L. P. Tobin. Chairman of Local Board of Health, Dr. H. J. Stuckey.

Source: Eight inch flowing well 480 feet deep, 4 inch flowing well 400 feet deep. 4 inch flowing well 400 feet deep. Reserve well can be called in for use 14 hours a day out of 24. 6 inch flowing well 500 feet deep. At present the 8 inch flowing well gives more water than can be used, therefore other wells are not being used. Capacity of plant 250,000 gallons per day (24 hours). Average consumption 75,000 gallons. Service ninety five per cent metered. Sewerage system: Seventy five per cent houses have septic tanks. No sewerage. Garbage disposed of by dump wagons.

June 27, 1923 .....	10.00	6.00	0.01	0.01	0.00	0.00	112.00	Negative
October 15, 1923 .....	20.00	6.00	0.01	0.01	0.00	0.10	73.00	Negative
December 15, 1923 .....	10.00	5.00	0.01	0.03	0.00	0.00	60.00	Negative

### Water Supply of Barnwell, S. C.

Barnwell Light & Water Works, Owned by city. Superintendent, F. H. Miller. In charge of collection of samples, F. H. Miller. Chairman of local Board of Health, W. C. Milhouse.  
 Source: Four wells. Three  $4\frac{1}{2}$  inches and one 6 inches in diameter, 151 feet deep, in city. Capacity, 200,000 gallons per day. Not filtered. Capacity of plant, 110,000 gallons per day. Average consumption, 80,000 gallons per capita, 30 gallons per day. Entire service metered.  
 Fifty per cent of buildings using city water supply.  
 Sewerage system: Ninety per cent of buildings have water closets. Forty per cent connected with sewer. Ten per cent have septic tanks.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 12, 1923 .....	5.00	8.00	0.03	0.02	0.00	0.00	115.00	Negative	Negative
May 31, 1923 .....	5.00	9.00	0.01	0.02	0.00	0.00	90.00	Negative	Negative
September 4, 1923 .....	5.00	8.00	0.01	0.01	0.00	0.10	83.00	Negative	Negative
December 7, 1923 .....	5.00	7.00	0.01	0.02	0.00	0.00	100.00	Negative	Negative

### Water Supply of Batesburg, S. C.

Commission of Public Works, Owned by town. Superintendent, R. E. Hoover. In charge of collection of samples, R. E. Hoover. Chairman of local Board of Health, Dr. R. M. Timmerman.  
 Source: Three wells in city. Not filtered. Capacity 176,000 gallons per day. Service metered. Average consumption, 50,000 gallons per day. Consumption per capita, 2 gallons per day. One hundred per cent buildings using city water supply. Complete sewerage system. Ten per cent septic tanks. Two garbage disposal plants.

April 26, 1923 .....	5.00	7.00	0.01	0.00	0.00	0.00	160.00	Negative	Negative
June 27, 1923 .....	5.00	7.00	0.01	0.02	0.00	0.00	137.00	Negative	Negative
October 19, 1923 .....	5.00	8.00	0.01	0.01	0.00	0.00	147.00	Negative	Negative



### Water Supply of Beaufort, S. C.

City of Beaufort, S. C. Light & Water Department. Superintendent, L. W. Logan. In charge of collection of samples, Hunter K. McGee. Chairman of Local Board of Health, Dr. Van Smith.  
 Source: Well twelve inches in diameter and 125 feet deep, in center of city. Not filtered. Average consumption, 50,000 gallons per day. Consumption per capita, 50 gallons per day. Service partly metered. Thirty per cent of buildings connected with city water supply. No sewerage system. Fifty per cent private sewers. Sewerage empties into Salt Water River. No garbage disposal plant. Garbage dumped at edge of city limits and burned.

March 28, 1923 .....	5.00	37.00	0.01	0.01	0.00	0.00	255.00	Negative	Negative
June 13, 1923 .....	5.00	35.00	0.02	0.02	0.05	0.00	241.00	Negative	Negative
October 3, 1923 .....	10.00	34.00	0.01	0.02	0.00	0.00	237.00	Negative	Negative

### Water Supply of Belton S. C.

Water Supply of Town of Belton. Owned by City. Superintendent J. P. Griffin. In charge of collection of samples J. P. Griffin. Chairman of local Board of Health, Dr. R. L. Farker.  
 Source: Deep wells. Capacity of supply 85,000 to 100,000 gallons per twenty four hours. Capacity of plant 85,000 to 100,000 gallons per twenty four hours. Average consumption about 60,000 gallons per day. Eighty per cent of service metered. No sewerage system. A few private lines. Sewerage disposed of by running water, and emptied into small branches. Garbage hauled off and burned as far as possible. No garbage disposal plant.

July 17, 1923 .....	5.00	8.00	0.02	0.01	0.00	0.40	80.00	Negative	Negative
November 11, 1923 .....	5.00	5.00	0.01	0.01	0.00	0.00	90.00	Negative	Negative

### Water Supply of Bennettsville, S. C.

Bennettsville Electric & Water Plant. Owned by city. Manager, E. C. Morrison. In charge of collection of samples, E. C. Morrison. Chairman of local Board of Health, Dr. D. Jennings.  
 Source: Eight wells, four and one-half inches in diameter, six 60 feet deep and two 40 feet deep. Pumped by steam or electric pumps. Average consumption, 275,000 gallons per day. Capacity of plant, 500,000 gallons per day. Consumption per capita, 70 gallons per day. All services except public supply metered. Ninety-five per cent buildings in business and residence section and sixty per cent buildings in corporate limits using city water supply. Sewerage System: Eighty-seven per cent of buildings in residence and business section and 35 per cent buildings in city limits connected with sewer and have water closets. Septic tank. Sewerage empties into Crooked Creek one and a half miles from city. No garbage disposal plant.

March 26, 1923 .....	5.00	32.00	0.01	0.01	0.00	0.50	115.00	Negative	Negative
June 13, 1923 .....	5.00	23.00	0.02	0.01	0.00	0.40	86.00	Negative	Negative
September 5, 1923 .....	5.00	30.00	0.02	0.02	0.00	0.40	75.00	Negative	Negative
December 7, 1923 .....	5.00	27.00	0.02	0.01	0.005	0.40	130.00	Negative	Negative

### Water Supply of Bishopville, S. C.

City of Bishopville Water Supply, owned by City of Bishopville. Superintendent in charge of supply, W. J. Graham. In charge of collection of samples, W. J. Graham. Chairman of local Board of Health, D. A. Quattliebbaum.  
 Source: Deep well. Capacity of supply 300,000 gallons per 24 hours. No treatment. Capacity of plant 300,000 gallons per day. Average consumption approximately 120,000 gallons per day. Sixty five per cent of service metered at present.  
 Sewerage system: Tile pipe to settling tank. 50 per cent of buildings have water closets and are connected with city sewer. Settled at tank and liquid allowed to flow to Lynche's river. Garbage is dumped out of city limits. No garbage plant or incinerator.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications.	Chemical Indications.
June 1, 1923 .....	5.00	7.00	0.01	0.01	0.00	0.00	30.00	Negative	Negative
September 13, 1923 .....	5.00	8.00	0.01	0.02	0.00	0.10	55.00	Negative	Negative

### Water Supply of Blacksburg, S. C.

City Water Works, owned by City. Superintendent, Gerard Lipscomb. In charge of collection of samples, Gerard Lipscomb. Chairman of local Board of Health, Dr. V. M. Roberts.  
 Source: Springs. Capacity of supply 275,000 gallons. Not filtered. No treatment. Capacity of plant in terms of gallons per day, 275,000. Average consumption 20,000 gallons per day. Service metered 100 per cent.  
 Sewerage system: Septic tanks, complete sewerage. Twenty per cent of buildings have water closets and are connected with city sewer. Sewage is disposed of by septic tanks, etc. Garbage disposed of by hauling away. No garbage plant or incinerator.

June 8, 1923 .....	5.00	6.00	0.02	0.01	0.00	0.00	237.00	Negative	Negative
September 4, 1923 .....	5.00	6.00	0.01	0.01	0.00	0.10	140.00	Negative	Negative
December 7, 1923 .....	5.00	6.00	0.01	0.01	0.00	0.00	165.00	Negative	Negative



## Water Supply of Camden, S. C.

City of Camden Water & Light Plant. Superintendent, W. B. Allred. In charge of collection of samples, John W. Wilson and W. B. Allred. Chairman of local Board of Health, C. W. Billings.

Source: Spring fed creek, one mile from city limits. Capacity, 7,200,000 gallons per day. Filtered by gravity sand filters. Treatment, one and a fourth grains alum per gallon, 1.23 grains soda ash per gallon. Capacity of plant, 575,000 gallons per day. Eighty-one per cent of buildings connected with and using city water supply. Sewerage system: Fifty-four per cent of buildings connected with sewerage system and have water closets. Sewerage empties into Wateree River. No garbage disposal plant. Garbage emptied on outskirts of town and partly burned.

March 12, 1923	5.00	7.00	0.01	0.02	0.00	0.10	75.00	Negative
June 9, 1923	5.00	7.00	0.01	0.02	0.00	0.10	95.00	Negative
September 4, 1923	5.00	5.00	0.01	0.01	0.00	0.10	51.00	Negative
December 7, 1923	5.00	7.00	0.01	0.01	0.00	0.10	35.00	Negative

## Water Supply of Charleston, S. C.

City Water Department, Commission of Public Works. Manager and Engineer, James E. Gibson. In charge of collection of samples, Dr. F. L. Parker. Chairman of local Board of Health, J. A. Ball.

Source: Goose Creek, 12 miles from city. This is an impounded supply, the reservoir being an old tide water basin dammed off from tidal sea water. Area of flooded reservoir 2,100 acres. Capacity, 2,700,000 gallons which would supply 3,000,000 gallons per day. Filtered by mechanical filter. Treatment, sulphate of alumina, caustic soda and liquid chlorine. Capacity of plant, pumping 15,000,000 gallons, filters, 14,000,000 gallons. Average consumption, 6,500,000 gallons per day. Consumption per capita, 80 gallons per day. Service 100 per cent metered. Supplementary supply, Ashley River, Bacon's Bridge, drainage area 231 square miles. Available supply as at present developed, 2,000,000 gallons. Sewerage system: Sewerage empties into Charleston Harbor. Garbage disposal plant, incinerator.

April 10, 1923	20.00	15.00	0.01	0.03	0.00	0.10	93.00	Negative
June 9, 1923	20.00	13.00	0.01	0.03	0.00	0.10	55.00	Negative
September 6, 1923	25.00	17.00	0.02	0.03	0.00	0.10	113.00	Negative
December 9, 1923	30.00	21.00	0.02	0.02	0.00	0.10	130.00	Negative

## Water Supply of Cheraw, S. C.

Cheraw Water Works, Municipal. Superintendent, J. D. Smith. In charge of collection of samples, D. L. Tillman, Clerk. Chairman of local Board of Health, Robert Chapman, J. D. Smith, Health officer.

Source: Pee Dee River. Capacity 1,200 gallons per minute. Filtered by Rapid sand filters. Water treated with soda ash, alum, and chloride of lime. Capacity of plant 400,000 gallons per day. Average consumption 200,000 gallons per day. Service metered 100 per cent.

Sewerage system: Nature of sewerage system, gravity, untreated—Pee Dee River. Thirty per cent of buildings have water closets and are connected with city sewer. Sewerage is buried unless severed. Sewerage system empties into Pee Dee River. Garbage is hauled to dump. No incinerator.

May 31, 1923	5.00	8.00	0.01	0.01	0.00	0.10	125.00	Negative
September 25, 1923	5.00	7.00	0.01	0.01	0.00	0.10	100.00	Negative
December 18, 1923	5.00	8.00	0.02	0.02	0.00	0.20	105.00	Negative

### Water Supply of Chester, S. C.

Chester Water Works. Owned by city. Superintendent, J. H. McLure. In charge of collection of samples, J. H. McLure. Chairman of local Board of Health, J. M. Wise.

Source: River three miles from city. Capacity, 1,200,000 gallons per day. Filtered by mechanical filter. Treatment, 2 grains alum per gallon. Water chlorinated. Capacity of plant, 720,000 gallons per day. Average consumption, 500,000 gallons per day. Consumption per capita, 80 gallons per day. Service metered. Eighty-five per cent of buildings using city water supply. Sewerage system: Eighty-five per cent of city sewered and have water closets. No sewerage disposal plant. Sewerage empties into Tan Yard Branch. Incinerator installed for disposal of garbage.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrites.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 13, 1923 .....	5.00	10.00	0.01	0.01	0.00	0.00	95.00	Negative	Negative
June 5, 1923 .....	5.00	9.00	0.01	0.02	0.00	0.00	105.00	Negative	Negative
September 5, 1923 .....	10.00	10.00	0.01	0.01	0.00	0.00	98.00	Negative	Negative
December 4, 1923 .....	5.00	9.00	0.01	0.01	0.00	0.00	118.00	Negative	Negative

### Water Supply of Clinton, S. C.

Municipal Water and Light Plant. Superintendent, Guy E. Tumblin. In charge of collection of samples, Guy E. Tumblin. Chairman of local Board of Health, Dr. T. L. W. Bailey.

Source: Wells, one 10 inches, three 8 inches and four 6 inches in diameter and 500 feet deep, in city. Capacity, 180,000 gallons per day; not filtered. Average consumption, 160,000 gallons per day. Consumption per capita, 35 gallons per day. Service metered. Eighty per cent of buildings connected with city water supply.

Sewerage system: Fifty per cent of buildings with sewer and have water closets. Septic tanks. Sewerage empties into two streams. No garbage disposal plant. Garbage dumped outside of city limits.

March 14, 1923 .....	5.00	15.00	0.01	0.01	0.00	0.30	195.00	Negative	Negative
June 5, 1923 .....	5.00	18.00	0.01	0.01	0.005	0.30	210.00	Negative	Negative
September 4, 1923 .....	5.00	19.00	0.02	0.02	0.001	0.30	207.00	Negative	Negative
December 5, 1923 .....	5.00	18.00	0.02	0.02	0.00	0.20	180.00	Negative	Negative



### Water Supply of Clover, S. C.

Water Supply of Town of Clover, owned by town. Superintendent, Jno. A. Jackson. In charge of collection of samples, Jno. A. Jackson. Chairman of local Board of Health, Dr. W. K. McGill.  
 Source: Deep wells. Capacity 110 gallons per minute. Not filtered. No treatment. Capacity of plant 160,000 gallons per day. Average consumption 65,000 gallons per day. Service metered 100 per cent.  
 Sewerage system: Ten per cent of buildings have water closets and are connected with sewer, sewer being completed September 15th, 1923. Septic Tanks. No garbage disposal plant or incinerator.

September 23, 1923 .....	10.00	7.00	0.02	0.01	0.00	0.30	100.00	Negative	Negative
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### Water Supply of Columbia, S. C.

Water Department, City of Columbia. City Engineer, W. S. Tomlinson. In charge of collection of samples, C. H. White for water works and Dr. Jean LaBorde. Local Health Officer, Dr. Jean LaBorde.  
 Source: Congaree River. Capacity practically unlimited. Filtered by rapid sand filters. Capacity of plant, 13,000,000 gallons per day. Treatment, one grain of alum per gallon. Average consumption, 6,500,000 gallons per day. Service metered. Ninety-nine per cent of buildings using city water supply. Sewerage system. Eighty-five per cent of buildings connected with city sewer and have water closets. Sewerage empties into Congaree River. Garbage is being dumped in out of the way places and covered with earth at present, and two disposal plants are now in operation.

March 12, 1923 .....	5.00	6.00	0.01	0.01	0.00	0.10	81.00	Negative	Negative
June 1, 1923 .....	5.00	6.00	0.04	0.02	0.00	0.10	65.00	Negative	Negative
September 1, 1923 .....	5.00	6.00	0.01	0.01	0.00	0.10	71.00	Negative	Negative
December 7, 1923 .....	5.00	6.00	0.02	0.02	0.00	0.10	75.00	Negative	Negative

### Water Supply of Conway, S. C.

Water Supply of Town of Conway, owned by town. Superintendent, O. H. Snider. In charge of collection of samples, O. H. Snider. Health officer, O. H. Snider.  
 Source: Flowing artesian well. Capacity 125 gallons per minute. Not filtered. No treatment. Capacity of plant 200,000 gallons per day. Average consumption 100,000 gallons per day. Service 100 per cent metered.  
 Sewerage system: Native of sewerage system verified sewer pipe. Fifty per cent of buildings have water closets and are connected with city sewer. Public sewer emptying into Waccamaw river. No garbage disposal plant. Garbage in outlying district hauled away by sanitary carts.

June 7, 1923 .....	10.00	52.00	0.01	0.01	0.005	0.00	683.00	Negative	Negative
September 26, 1923 .....	5.00	55.00	0.04	0.02	0.00	0.00	635.00	Negative	Negative

### Water Supply of Darlington, S. C.

Darlington Water Company. Superintendent, T. Miller White. In charge of collection of samples, T. Miller White. Chairman of local Board of Health, Dr. J. T. Coggeshall.

Source: Wells, diameter 8 inches. Depth, 335 feet. Diameter, 6 inches, depth, 200 feet, and diameter 10 inches, depth, 317 feet, in city. Capacity, 650,000 gallons per day. Capacity of plant, 650,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 45 gallons per day. Service metered. One hundred per cent of buildings using city water supply. Sewerage system: Almost all of town is sewerd. Seventy-five per cent of buildings connected with sewer and have water closets.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 12, 1923 .....	5.00	8.00	0.01	0.01	0.00	0.10	94.00	Negative	Negative
June 2, 1923 .....	15.00	4.00	0.01	0.01	0.00	0.00	75.00	Negative	Negative
September 5, 1923 .....	15.00	5.00	0.01	0.01	0.00	0.00	30.00	Negative	Negative
December 10, 1923 .....	10.00	5.00	0.01	0.01	0.00	0.10	39.00	Negative	Negative

### Water Supply of Dillon, S. C.

Dillon Water Works Plant. Owned by town. Secretary and Treasurer, Mrs. Jennie Watson. J. W. Lovejoy, Superintendent and in charge of collection of samples. Chairman of local Board of Health, Dr. L. F. Johnson.

Source: Twenty shallow wells 30 feet deep (at present are boring wells below 200 feet). Capacity, 288,000 gallons per day. Filtered through sand. Treatment, soda ash and alum. Capacity of plant, 130,000 gallons per day. Average consumption, 75,000 gallons per day. Consumption per capita, 30 gallons per day. Service metered. Seventy-five per cent of buildings using city water supply. Sewerage system: Seventy-five per cent of city connected with sewerage system, fifty per cent of city buildings have water closets. Septic tank. Sewerage empties into Pee Dee River. No garbage disposal plant. Garbage dumped in low and suitable places.

March 21, 1923 .....	5.00	9.00	0.02	0.02	0.00	0.40	80.00	Negative	Negative
June 18, 1923 .....	5.00	10.00	0.02	0.01	0.00	0.30	35.00	Negative	Negative
September 10, 1923 .....	15.00	9.00	0.01	0.02	0.00	0.10	33.00	Negative	Negative
December 12, 1923 .....	5.00	9.00	0.01	0.01	0.00	0.30	30.00	Negative	Negative



### Water Supply of Due West, S. C.

Due West Water, Light & Power Company. Owned by town. Superintendent, G. A. McIlwain. In charge of collection of samples, G. A. McIlwain. Chairman of local Board of Health, J. R. Bell.  
 Source: Deep well. Not filtered. No treatment. Capacity of plant 86,400 gallons per day. Average consumption 57,600 gallons per day. 100 per cent metered.  
 Sewerage system: Seventy five per cent of buildings have water closets and are connected with city sewer. Sewage emptied into Cowans creek, and Chicasaw creek. Sewerage system of terra cotta pipe. Garbage disposed of by individuals. No garbage disposal plant.

August 14, 1923 .....	5.00	15.00	0.04	0.02	0.00	0.10	181.00	Negative	*Negative
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### Water Supply of Easley, S. C.

City Water and Light Plant. Owned by City. Superintendent, T. M. Rogers. In charge of collection of samples, T. M. Rogers. Chairman of local Board of Health, Dr. J. C. Walker.  
 Source: Wells and creek. Wells, diameter, 2 inches; depth, average, 30 feet, pumped. Distance from city, three-quarters of a mile. Creek one mile from city. Capacity, 1,000,000 gallons per day. Creek water filtered by gravity filter. Treatment, lime and sulphate of alumina. Average consumption, 125,000 gallons per day. Consumption per capita, 17 gallons per day. Service metered. Eighty per cent of buildings using city water supply. Six miles of sewerage system. Septic tank. No garbage disposal plant. Garbage dumped into large ditch.

March 14, 1923 .....	5.00	5.00	0.02	0.02	0.00	0.10	90.00	Negative	Negative
June 8, 1923 .....	5.00	5.00	0.01	0.03	0.00	0.10	80.00	Negative	Negative
September 8, 1923 .....	5.00	5.00	0.01	0.01	0.00	0.10	65.00	Negative	Negative
December 15, 1923 .....	5.00	5.00	0.01	0.01	0.00	0.20	110.00	Negative	Negative

### Water Supply of Edgefield, S. C.

Water Works Commission. Owned by Town of Edgefield, S. C. Superintendent, W. M. Harling. In charge of collection of samples, W. M. Harling. Chairman of local Board of Health, Dr. Robt. A. Marsh.  
 Source: Two wells, diameter 8 inches, depth 130 feet. Capacity 72,000 gallons per day. Not filtered. No treatment. Capacity of plant in terms of gallons per day, 60,000. Average consumption 45,000 gallons per day. Ninety-nine per cent of service metered.  
 Sewerage system: Twenty-five per cent of buildings have water closets and are connected with city sewer. Automatic flush tanks carry sewerage to septic tanks, thence through a filter bed. No garbage disposal plant. Garbage is burned.

July 14, 1923 .....	5.00	10.00	0.01	0.02	0.00	0.30	120.00	Negative	Negative
October 24, 1923 .....	5.00	9.00	0.01	0.01	0.00	0.10	140.00	Negative	Negative

### Water Supply of Florence, S. C.

City of Florence Water Department. Owned by city. Superintendent, D. L. Husbands. In charge of collection of samples, Dr. P. H. Brigham. Health officer, Dr. P. H. Brigham.

Source: Three wells, capacity 1,000,000 gallons per day. Not filtered. Average consumption, 600,000 gallons per day. Consumption per capita, 91 gallons per day. Service metered. Ninety per cent of buildings using city water supply. Sewerage System: Sixty per cent of city sewered. Forty per cent connected with sewer and have water closets. Sewerage disposal plant. Sewerage empties into Jeffries Creek. Nye odorless incinerator, ten ton capacity, located on outskirts of city.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 14, 1923 .....	5.00	31.00	0.01	0.01	0.00	150.00	Negative	Negative
July 5, 1923 .....	20.00	26.00	0.01	0.02	0.00	165.00	Negative	Negative
September 6, 1923 .....	15.00	28.00	0.01	0.01	0.00	143.00	Negative	Negative
December 5, 1923 .....	15.00	22.00	0.01	0.01	0.00	134.00	Negative	Negative

### Water Supply of Fountain Inn, S. C.

Fountain Inn Water Works. Owned by town of Fountain Inn, bonded. Superintendent, W. A. Tumbling. In charge of collection of samples, W. A. Tumbling, C. T. Hamrick, Com. Chairman of local Board of Health, Dr. J. L. Thomason.

Source: Three wells. Capacity of supply 144,000 gallons per day. Not filtered. Capacity of plant in terms of gallons per day 144,000. Average consumption 40,000 gallons per day. Service metered 100 per cent.

Sewerage system: Eighty per cent of buildings connected with sewer and have water closets. Sewerage system of 8 in., 6 in., and 4 in. terra cotta. Sewerage conveyed to three septic tanks and thence to Mill branch, Thackerton Branch, and Kinglit Branch. No disposal plant for garbage. Garbage dumped at city dump.

June 19, 1923 .....	5.00	14.00	0.02	0.02	0.00	147.00	Negative	Negative
September 5, 1923 .....	5.00	7.00	0.01	0.01	0.00	85.00	Negative	Negative
December 15, 1923 .....	5.00	4.00	0.01	0.02	0.00	125.00	Negative	Negative



### Water Supply of Gaffney, S. C.

Board of Public Works. Owned by city. Superintendent, L. V. Gaffney. In charge of collection of samples, L. V. Gaffney. Chairman of local Board of Health, J. O. Creech.  
Source: Cherokee River,  $3\frac{1}{2}$  miles from city. Filtered by gravity filter. Treatment, one grain of alum per gallon. Capacity of plant, 1,000,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 25 gallons per day. Service metered. Seventy-five per cent of buildings using city water supply. Sewerage system: Forty per cent of buildings connected with sewer and have water closets. Sewerage disposal plant. Sewerage empties into branch. Garbage disposal plant, incinerator. Septic tank.

April 3, 1923 .....	5.00	6.00	0.01	0.02	0.00	0.10	88.00	Negative
June 25, 1923 .....	5.00	4.00	0.01	0.01	0.00	0.10	65.00	Negative
October 1, 1923 .....	5.00	7.00	0.02	0.01	0.00	0.00	80.00	Negative

### Water Supply of Greer, S. C.

Commission of Public Works. Owned by city. Superintendent, E. M. Anderson. In charge of collection of samples, E. M. Anderson. Chairman of local Board of Health, Dr. W. T. Brockman.

Source: Four wells in city. Capacity, 230,000 gallons per day. Not filtered. Average consumption, 100,000 gallons per day. Service metered. Thirty two per cent of buildings using city water supply. Sewerage system: Thirty per cent of buildings connected with sewerage system and have water closets. Sewerage empties into branch. No garbage disposal plant. Garbage dumped into fields outside of city limits.

March 28, 1923 .....	5.00	5.00	0.01	0.00	0.00	0.10	32.00	Negative
June 1, 1923 .....	5.00	6.00	0.02	0.01	0.00	0.30	42.00	Negative
September 4, 1923 .....	5.00	5.00	0.02	0.01	0.00	0.30	45.00	Negative
December 7, 1923 .....	5.00	5.00	0.01	0.02	0.00	0.20	71.00	Negative

### Water Supply of Greenville, S. C.

Greenville City Water Works. Superintendent, H. W. Perry. In charge of collection of samples, H. W. Perry. Chairman of local Board of Health, Dr. Davis Furman.

Source: Streams in Paris Mountain to reservoirs, 8 and 12 miles from city; gravity system. Capacity, 5,000,000 gallons per day. Not filtered. Average consumption, 2,000,000 gallons per day. Consumption per capita, 50 gallons per day. Service metered. Ninety-eight per cent of buildings using city water supply. Additional source run only during dry season. Pump station on Enoree River. 3,000,000 gallons daily capacity. Filtered and chlorinated when used. Sewerage system: Seventy-five per cent of city sewered and have water closets. Sewerage empties into Reedy River. Garbage disposal plant. Garbage dumped at crematory and burned.

March 13, 1923 .....	5.00	5.00	0.01	0.02	0.00	0.00	82.00	Negative
June 7, 1923 .....	5.00	4.00	0.01	0.02	0.00	0.00	90.00	Negative
August 31, 1923 .....	5.00	5.00	0.01	0.01	0.00	0.00	55.00	Negative
December 13, 1923 .....	5.00	4.00	0.02	0.01	0.00	0.00	80.00	Negative

### Water Supply of Georgetown, S. C.

Black River Water Co. G. S. Clarke, president. In charge of collection of samples, Dr. H. L. Wright. Chairman of local Board of Health, Dr. W. W. Gaillard.  
 Source: Black River, 75 miles from city by river, 15 miles by air line. Capacity, 1,000,000 gallons per day. Filtered by slow sand filter. No treatment.  
 Capacity of plant, 1,000,000 gallons per day. Average consumption, 177,000 gallons per day. Consumption per capita, 75 gallons per day. Service metered. Sewerage system: Sixty per cent of city sewered. Sewerage empties into Sampit River. No garbage disposal plant. Garbage dumped in low places on abandoned rice fields.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrites.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 13, 1923 .....	140.00	11.00	0.02	0.05	0.00	0.00	55.00	Negative	Negative
June 2, 1923 .....	125.00	10.00	0.02	0.03	0.00	0.30	95.00	Negative	Negative
September 4, 1923 .....	120.00	10.00	0.01	0.02	0.00	0.10	85.00	Negative	Negative
December 5, 1923 .....	130.00	10.00	0.02	0.02	0.00	0.10	93.00	Negative	Negative

### Water Supply of Graniteville, S. C.

Graniteville Manufacturing Co. Superintendent, G. H. Leitner. In charge of collection of samples, T. E. Carpenter.  
 Source: Spring, one mile from town; not filtered. Capacity, 40,000 gallons per day. Average consumption, 22,000 gallons per day. Consumption per capita, 20 gallons per day. Service not metered. Fifty-two per cent of buildings using city water supply. Sewerage system: Ten per cent of city sewered.  
 Two per cent of buildings connected with sewer. Sewerage empties into Horse Creek. No garbage disposal plant. Garbage dumped outside of town limits.

March 19, 1923 .....	5.00	4.00	0.01	0.02	0.00	0.00	65.00	Negative	Negative
June 1, 1923 .....	5.00	6.00	0.02	0.02	0.00	0.00	60.00	Negative	Negative
September 11, 1923 .....	5.00	6.00	0.02	0.01	0.00	0.20	23.00	Negative	Negative



### Water Supply of Greenwood, S. C.

Greenwood Water and Electric Plant. Owned by city. Superintendent, A. J. Sproles. In charge of collection of samples, A. J. Sproles. Chairman of local Board of Health, G. H. Blake.  
 Source: Nine deep wells. Capacity, 700,000 gallons; additional water supply, 750,000 gallons per day, filtered. Average consumption, 500,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered 90 per cent. Seventy-five per cent of buildings using city water supply. Sewerage system: Eighty per cent of city sewered. Treatment, septic tanks on to sand and gravel. No garbage disposal plant. Garbage dumped on vacant lots.

March 28, 1923 .....	5.00	9.00	0.01	0.01	0.00	0.00	200.00	Negative
June 8, 1923 .....	5.00	7.00	0.02	0.01	0.001	0.00	220.00	Negative
September 5, 1923 .....	5.00	8.00	0.01	0.03	0.00	0.00	123.00	Negative
December 13, 1923 .....	5.00	6.00	0.02	0.02	0.005	0.10	230.00	Negative

### Water Supply of Hartsville, S. C.

Board of Commission of Public Works. Owned by city. Superintendent, W. H. Garland. In charge of collection of samples, W. H. Garland. Chairman of local Board of Health, D. R. Coker.  
 Source: Three wells, 3½ inches in diameter, 287 feet deep, 4 inches in diameter, 252 feet deep; 6 inches in diameter, 260 feet deep. Pumped. Capacity, 631,200 gallons per day. Not filtered. Average consumption 316,800 gallons per day. Consumption per capita, 60 gallons per day. Service metered. Sewerage system: Sixty-five per cent of city sewered. Sewerage empties into Black Creek. Garbage disposal plant. Garbage burned. Fifteen per cent new water and sewer being installed.

March 12, 1923 .....	5.00	5.00	0.03	0.02	0.00	0.00	50.00	Negative
June 1, 1923 .....	5.00	5.00	0.01	0.02	0.00	0.00	33.00	Negative
September 1, 1923 .....	5.00	6.00	0.02	0.01	0.00	0.00	15.00	Negative
December 12, 1923 .....	5.00	4.00	0.01	0.01	0.00	0.00	75.00	Negative

### Water Supply of Honea Path, S. C.

Board of Public Works. Owned by City. Superintendent, W. P. Moring. In charge of collection of samples, P. W. Moring. Chairman of local Board of Health, Dr. H. B. Williams.  
 Source: Four wells. Capacity 75,000 gallons. Not filtered. No treatment. Capacity of plant 50,000 gallons per day. Sixty-seven per cent of service metered.  
 Sewerage system: None. Garbage hauled to dump out of city.

June 5, 1923 .....	5.00	40.00	0.01	0.02	0.00	0.40	223.00	Negative
September 11, 1923 .....	5.00	55.00	0.02	0.01	0.001	0.50	160.00	Negative
December 13, 1923 .....	5.00	39.00	0.01	0.02	0.001	0.40	185.00	Negative

### Water Supply of Kingstree, S. C.

Kingsree Water Works. Owned by city. Superintendent, S. C. Anderson. Chairman of local Board of Health, A. M. Gordon. Source: Three artesian wells on grounds with plant, at center of city. One well 3½ inches in diameter 350 feet deep, one 8 inches in diameter 518 feet deep and one 6 inches in diameter and 521 feet deep. Capacity 216,000 gallons per day. Not filtered. Average consumption 85,000 gallons per day of 24 hours. Consumption per capita, 34 gallons per day. Service metered. Sixty-five per cent of buildings using city water supply. Sewerage system: Have made extension of 13,000 feet of 4 inch main sewerage system. Eighty per cent of city sewered. Sixty-five per cent of buildings connected with sewer and have water closets. Sewerage disposal plant: Sewage treated with kerosene and salt. Sewerage empties into Black River. Eight inch main has been extended about 13,000 feet. No garbage disposal plant. Garbage dumped and burned outside of city.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 12, 1923 .....	5.00	8.00	0.02	0.01	0.00	312.00	Negative	Negative
June 26, 1923 .....	5.00	8.00	0.02	0.02	0.00	218.00	Negative	Negative
September 19, 1923 .....	10.00	9.00	0.01	0.02	0.00	245.00	Negative	Negative
December 11, 1923 .....	5.00	9.00	0.01	0.01	0.10	280.00	Negative	Negative

### Water Supply of Lancaster, S. C.

Commission of Public Works. Owned by city. Superintendent, R. A. Harper. In charge of collection of samples, Dr. W. F. Laing. Chairman of Local Board of Health, W. R. Thompson. Source: Two creeks, one and one-half miles from city. Capacity, 1,000,000 gallons per day. Filtered by mechanical filter. Treatment, 1 grain alum per gallon. Capacity of plant, 720,000 gallons per day. Average consumption, 300,000 gallons per day. Consumption per capita, 20 gallons per day. Seventy-five per cent of the buildings using city water supply. Service metered. Sewerage system: Seventy per cent of city sewered and have water closets. Sewerage empties into Little River. No garbage disposal plant. Garbage dumped outside city limits and treated with lime when necessary.

March 13, 1923 .....	5.00	14.00	0.01	0.03	0.00	86.00	Negative	Negative
June 8, 1923 .....	5.00	11.00	0.01	0.01	0.00	105.00	Negative	Negative
September 5, 1923 .....	5.00	10.00	0.03	0.01	0.00	168.00	Negative	Negative



### Water Supply of Laurens, S. C.

Municipal Light & Water Plant. Superintendent, F. W. Chapman. In charge of collection of samples, F. W. Chapman. Chairman of local Board of Health, Dr. W. D. Ferguson.

Source: Reedy Ford Creed. Rapid sand filters (2). Treatment 3-4 grain alum and one eighth grain lime. Covered clear well of 525,000 gallons. Present demand 225,000 gallons. Consumption per capita 45 gallons per day. Service metered. Ninety per cent of buildings using city water supply. Water chlorinated.

Sewerage system: Seventy-five per cent of buildings connected with sewer and have water closets. Sewerage empties into Little River. No garbage disposal plant. Garbage dumped outside of city limits and treated with lime when necessary.

March 4, 1923 .....	15.00	6.00	0.01	0.01	0.00	0.10	101.00	Negative
July 6, 1923 .....	80.00	8.00	0.02	0.02	0.00	0.20	132.00	Negative
September 4, 1923 .....	10.00	8.00	0.02	0.01	0.00	0.20	77.00	Negative
December 12, 1923 .....	5.00	7.00	0.01	0.01	0.00	0.10	85.00	Negative

### Water Supply of Liberty, S. C.

Commission of Public Works. Owned by City of Liberty. Superintendent, P. O. Wilson. In charge of collection of samples, P. O. Wilson. Chairman of local Board of Health, Dr. W. M. Long.

Source: Branch. Capacity of supply 100,000 gallons per day. Filtered by Robert's filters, capacity of which are 25,000 gallons. Water treated with alum and chlorinated lime. Capacity of plant 50,000 gallons per day. Average consumption 30,000 gallons per day. Seventy-five per cent of service metered. Sewerage system: Septic tanks. No city sewer. Garbage hauled away from town.

June 13, 1923 .....	5.00	6.00	0.01	0.01	0.00	0.20	95.00	Negative
September 26, 1923 .....	5.00	8.00	0.01	0.02	0.00	0.20	45.00	Negative

### Water Supply of Manning, S. C.

Manning Water Works. Owned by city. Superintendent, F. P. Ervin. In charge of collection of samples, F. P. Ervin.

Source: Artesian well, 6 inches in diameter, 485 feet deep, 480 feet deep, cased. Not filtered. Capacity of well, natural flow, 37 gallons per minute. Capacity of well with Compressor working, 200 gallons per minute. Storage facilities: Concrete reservoir holding 245,000 gallons. Elevated tank holding 100,000 gallons. Average consumption daily, 75,000 gallons. Service metered. Eighty per cent of buildings using city water supply. Sewerage system: Seventy-five per cent of city sewer. Thirty-eight per cent with water closets. Sewerage empties into Black River Swamp. No garbage disposal plant.

June 5, 1923 .....	15.00	8.00	0.01	0.02	0.00	0.10	195.00	Negative
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### Water Supply of Marion, S. C.

Marion Water Company. Vice president and General Manager, P. A. Tillery, Raleigh, N. C. In charge of collection of samples T. D. Ector, Division Superintendent. Chairman of local Board of Health, Dr. C. S. Howell.

Source: Wells, diameter 8 and 6 inches; depths, 100 and 163 feet. In city. Capacity, 175,000 gallons per day; not filtered. Capacity of plant, 175,000 gallons per day. Average consumption 100,000 gallons per capita, 25 gallons per day. Consumption per capita, 25 gallons per day. Service metered. 100 per cent of buildings using city water supply. Sewerage system: Entire city sewered. Forty percent of buildings connected with sewer and have water closets. Septic tank. Sewerage empties into Catfish Creek. Garbage dumped on "Dump Grounds," outside of city and set on fire. No garbage disposal plant.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrites.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 13, 1923 .....	5.00	10.00	0.02	0.02	0.00	0.00	180.00	Negative	Negative
June 2, 1923 .....	5.00	8.00	0.02	0.01	0.00	0.00	197.00	Negative	Negative
August 31, 1923 .....	5.00	8.00	0.03	0.02	0.00	0.00	128.00	Negative	Negative
December 12, 1923 .....	5.00	7.00	0.01	0.01	0.00	0.00	203.00	Negative	Negative

### Water Supply of McColl, S. C.

Municipal Water Plant, McColl, S. C. Superintendent, Chief of Police W. F. Carpenter. In charge of collection of samples, W. F. Carpenter. Chairman of local Board of Health, J. C. Moore, M. D.

Source: Three wells 100 feet deep, 6 inches in diameter, within city. Capacity 300,000 gallons per day of 24 hours. Not filtered. Average consumption about 100,000 gallons. Service metered. Ninety per cent of buildings using city water supply.

Sewerage system: Entire city sewered. Eighty-five per cent of buildings have water closets. Sewerage disposal plant on Beaver Dam Creek put in operation. Sewer empties into Painter Creek. No garbage disposal plant. Garbage hauled outside of city limits.

March 28, 1923 .....	5.00	6.00	0.01	0.01	0.00	0.30	42.00	Negative	Negative
June 18, 1923 .....	5.00	7.00	0.01	0.01	0.00	0.20	51.00	Negative	Negative
September 27, 1923 .....	5.00	10.00	0.01	0.01	0.00	0.30	110.00	Negative	Negative
December 12, 1923 .....	5.00	7.00	0.01	0.02	0.00	0.30	80.00	Negative	Negative



### Water Supply of Mullins, S. C.

Board of Public Works. Owned by town of Mullins. Superintendent, G. M. Brown. In charge of collection of samples G. M. Brown. Chairman of local Board of Health, Dr. J. H. Smith.  
 Source: Deep well, 10 inches in diameter and 350 feet deep, in city. Capacity, 125,000 gallons per day. Average consumption, 75,000 gallons per day. Service metered. Ninety-nine per cent of buildings using city water supply.  
 Sewerage system: Fifty per cent septic tanks 4-10 of 1 per cent. Seventy-five per cent of city sewered. Forty per cent of buildings are connected with sewer and have water closets. Sewerage empties into open stream, White Oak. No garbage disposal plant. Garbage dumped outside of city limits.

March 22, 1923 .....	5.00	10.00	0.02	0.02	0.00	0.00	225.00	Negative
June 18, 1923 .....	5.00	10.00	0.01	0.02	0.00	0.00	185.00	Negative
September 31, 1923 .....	10.00	10.00	0.01	0.01	0.00	0.10	216.00	Negative
December 18, 1923 .....	5.00	10.00	0.02	0.02	0.00	0.10	245.00	Negative

### Water Supply of Newberry, S. C.

Commission of Public Works. Owned by city. Superintendent, H. W. Schumpert. In charge of collection of samples, Dr. R. L. Mayes. Chairman of local Board of Health, Dr. R. L. Mayes.

Source: Wells, 8 inches in diameter, 300 feet deep; 8 inches in diameter, 300 feet deep; 10 inches in diameter, 300.5 feet deep; 10 inches in diameter, 350 feet deep. Pumped by air and also by Pomona No. 18, and No. 10 deep well pumps, in city limits. Capacity, 360,000 gallons per day; not filtered. Average consumption more than capacity. Consumption per capita 50 gallons per day. Service metered. Ninety-five per cent of buildings adjacent using city water supply. (Due to water shortage in Newberry it is contemplated to vote bonds for an up-to-date water plant. Filtration plant to Bush River which is 2.6 miles away.)

Sewerage system: Seventy-five per cent adjacent connected with sewer. Now connections in tenement houses in cotton mill district. Were using a "Pot Dry Closet" system but are changing over right now. Sewerage disposal plant. Septic tank and filter. Sewerage empties into Scott's Creek. Incinerator for disposal of garbage.

March 12, 1923 .....	5.00	36.00	0.04	0.02	0.00	0.40	320.00	Negative
May 31, 1923 .....	5.00	34.00	0.01	0.01	0.00	0.40	312.00	Negative
August 31, 1923 .....	5.00	35.00	0.01	0.02	0.00	0.30	207.00	Negative
December 13, 1923 .....	5.00	33.00	0.02	0.01	0.001	0.30	380.00	Negative

### Water Supply of Ninety Six, S. C.

Water Supply Town of Ninety Six. Owned by town. Mr. W. B. Jeter superintendent. In charge of collection of samples, W. B. Jeter. Chairman of local Board of Health, C. L. Moseley.

Source: Deep well. Capacity 19,360 gallons per day. Not filtered. Capacity of plant 20,000 gallons per day. Average consumption 5,000 gallons per day. Service not metered. No treatment.

Sewerage system: None. Garbage is hauled out of town. No sewerage disposal plant.

September 12, 1923 .....	5.00	113.00	0.01	0.01	0.001	0.40	615.00	Negative
December 20, 1923 .....	5.00	118.00	0.01	0.01	0.00	0.30	630.00	Negative

### Water Supply of North Augusta, S. C.

North Augusta Water Works. Owned by town. W. E. Mealing, Chairman of Public Service Commission. In charge of collection of samples, W. E. Mealing. Chairman of local Board of Health, W. E. Mealing.  
 Source: Springs forming lake in city, not filtered. Chlorination plant has been installed. Treatment 1.50 pounds hypochlorite of lime to 1,500,000 gallons. Capacity of plant, 330,000 gallons per day. Capacity of supply, 400,000 gallons per day. Average consumption, 250,000 gallons per day. Service not metered. Sewerage system: Eighty percent of city sewered. Sewerage empties into Savannah River. No garbage disposal plant. Garbage dumped outside of town.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 19, 1923 .....	5.00	9.00	0.01	0.01	0.00	0.50	76.00	Negative	Negative
July 28, 1923 .....	5.00	9.00	0.30	0.02	0.00	0.40	95.00	Negative	Negative
September 10, 1923 .....	5.00	9.00	0.02	0.02	0.001	0.40	85.00	Negative	Negative
December 15, 1923 .....	5.00	7.00	0.01	0.03	0.00	0.40	60.00	Negative	Negative

### Water Supply of Orangeburg, S. C.

Orangeburg Water and Light Plant. Owned by city. Superintendent, J. F. Pearson. Chairman of local Board of Health, V. W. Brabham.  
 Source: Three wells 8 inches in diameter and 200 feet deep, and one 10 inches in diameter and 250 feet deep, pumped and flowing in city. Capacity 800,000 gallons per day. Not filtered. Capacity of plant, 1,000,000 gallons per day. Average consumption, 400,000 gallons per day. Consumption per capita, 48 gallons per day. Service metered 98 per cent. Sewerage system: Sixty-five percent of buildings connected with sewer and have water closets. Sewerage empties into Edisto River. Garbage dumped at incinerator and burned.

March 16, 1923 .....	10.00	10.00	0.01	0.02	0.00	0.00	190.00	Negative	Negative
June 26, 1923 .....	5.00	10.00	0.01	0.01	0.00	0.00	178.00	Negative	Negative
September 5, 1923 .....	5.00	11.00	0.01	0.01	0.00	0.00	216.00	Negative	Negative
December 18, 1923 .....	5.00	9.00	0.01	0.01	0.00	0.10	220.00	Negative	Negative



### Water Supply of Pickens, S. C.

Commission of Public Works. Owned by city. Superintendent, C. L. Hester. In charge of collection of samples, C. L. Hester. Chairman of local Board of Health, J. L. Valley.

Source: Town Creek, ten feet wide and eighteen inches deep. Filtered. Filters 80,000 gallon capacity, sand and rock. Treatment lime and alum in settling basin, filtered and chlorinated. Capacity of plant 75,000 gallons per day. Average consumption 15,000 gallons per day. Service metered one hundred per cent.

Sewerage system: Gravity with flush tanks and septic tanks. Sixty per cent of buildings are connected with city sewer and have water closets. Sewerage disposed of by septic tanks and into large Town Creek. No garbage disposal plant. Garbage hauled into country.

March 28, 1923 .....	15.00	5.00	0.01	0.01	0.00	0.10	28.00	Negative
June 5, 1923 .....	5.00	6.00	0.01	0.02	0.00	0.20	61.00	Negative
September 5, 1923 .....	10.00	7.00	0.01	0.01	0.00	0.10	107.00	Negative
December 24, 1923 .....	5.00	4.00	0.01	0.01	0.00	0.20	77.00	Negative

### Water Supply of Rock Hill, S. C.

Water and Light Department, owned by city of Rock Hill. Manager, W. P. Goodman. In charge of collection of samples, S. T. Frew. Chairman of local Board of Health, Dr. J. B. Miller.

Source: Catawba River, 6 miles from city. Filtered by mechanical filter. Treatment,  $\frac{3}{4}$  grain of alum per gallon;  $\frac{1}{2}$  grain of lime per gallon; 0.05 grain hypochlorite of lime per gallon. Capacity of plant 1,000,000 gallons per day. Average consumption, 800,000 gallons per day. Consumption per capita, 50 gallons per day. Service metered. Seventy percent of buildings using city water supply. Sewerage system: Forty percent of buildings connected with sewer and have water closets. Sewerage empties into small streams after Imhoff treatment, thence into Catawba River. Sewerage disposal plant. Garbage dumped on city farm.

March 19, 1923 .....	5.00	6.00	0.01	0.01	0.00	0.10	53.00	Negative
June 27, 1923 .....	5.00	6.00	0.01	0.02	0.00	0.10	61.00	Negative
September 19, 1923 .....	10.00	8.00	0.01	0.02	0.001	0.10	70.00	Negative
December 18, 1923 .....	5.00	7.00	0.01	0.01	0.00	0.10	95.00	Negative

### Water Supply of St. George, S. C.

Dorchester Cotton Oil Company, St. George, S. C. Superintendent, J. W. Harrison. In charge of collection of samples, W. T. Brown. Chairman of local Board of Health, Dr. W. S. Judy.

Source: Deep well. Capacity 12,000 gallons per day. Not filtered. No treatment. Capacity of plant 60,000 gallons per day. Average consumption 25,000 gallons per day. Service metered. None.

Sewerage system: No sewerage system. Some water closets but no sewer. Sewage disposed of by septic tanks and back houses. No garbage disposal plant or incinerator. Garbage hauled off.

June 19, 1923 .....	5.00	8.00	0.02	0.01	0.00	0.10	257.00	Negative
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### Water Supply of St. Matthews, S. C.

Commission of Public Works, Owned by Town of St. Matthews, S. C. Superintendent, J. W. Tucker. In charge of collection of samples, J. W. Tucker. Chairman of local Board of Health, Dr. T. H. Dreher.  
 Source: Well. Capacity 390,000 gallons per day. Not filtered. No treatment. Capacity of plant 648,000 gallons per day. Average consumption 75,000 gallons per day. Service metered 100 per cent.  
 Sewerage system: Septic tanks, open closets cleaned and hauled off. Fifty per cent of buildings have septic tanks. No garbage disposal plant or incinerator. Garbage hauled off.

Sample Drawn	Color	Chlorine	Free Ammonia	Albuminoid Ammonia	Nitrogen as Nitrites	Nitrogen as Nitrates	Total Solids	Bacterial Indications of Contamination	Chemical Indications of Contamination
March 24, 1923 .....	5.00	7.00	0.01	0.02	0.00	0.01	110.00	Negative	Negative
June 8, 1923 .....	5.00	7.00	0.01	0.02	0.00	0.10	150.00	Negative	Negative
December 12, 1923 .....	5.00	8.00	0.01	0.02	0.00	0.20	103.00	Negative	Negative

### Water Supply of Seneca, S. C.

Commission of Public Works, Owned by Town of Seneca. Superintendent, C. Floyd. In charge of collection of samples, C. Floyd. Chairman of local Board of Health, Dr. E. A. Hines.  
 Source: Thompson Creek. Capacity 1,440,000 gallons per day. Filtered. 1,093,000 gallons per day sand and rock filters. Treated with lime, alum and chlorine. Capacity of plant 720,000 gallons per 12 hours. Average consumption 75,000 gallons per day. Service metered 100 per cent.  
 Sewerage system: Gravity sewerage system. Seventy-five per cent of buildings have water closets and are connected with city sewer. Sewage empties into creek. No garbage disposal plant or incinerator, garbage hauled away.

March 12, 1923 .....	5.00	5.00	0.04	0.02	0.00	0.20	85.00	Negative	Negative
June 5, 1923 .....	15.00	4.00	0.01	0.01	0.00	0.10	155.00	Negative	Negative
September 5, 1923 .....	5.00	6.00	0.02	0.02	0.00	0.10	75.00	Negative	Negative
December 15, 1923 .....	5.00	4.00	0.01	0.01	0.00	0.10	50.00	Negative	Negative



### Water Supply of Spartanburg, S. C.

Spartanburg Water Works. Owned by city. Operated by specially chartered Board of Water Commissioners. Superintendent, R. B. Simms. Chairman of local Board of Health, Dr. H. E. Black.

Source: Chinquapin Creek that flows into reservoir, Shoaley and Lawson's Fork Creeks, two miles from city limits. Capacity, 8,000,000 gallons per day. City consumption, 1,750,000 gallons per day. Treatment, one-half to 4 grains alum owing to turbidity with six to eight hours coagulant run, thence through mechanical filter to clear well and treated with chlorine. Consumption per capita, 60 gallons per day. Service metered. Ninety per cent of city buildings using city water supply. Sewerage system: Ninety per cent of buildings connected with sewer and have water closets. Sewerage empties into Lawson's Fork Creek and Fair Forest Creek, 1.8 mile from city limits. Garbage disposal plant and garbage burned, some garbage dumped on outskirts of city.

March 22, 1923	5.00	5.00	0.02	0.02	0.00	0.10	52.00	Negative
June 2, 1923	5.00	5.00	0.02	0.02	0.00	0.10	90.00	Negative
August 31, 1923	5.00	5.00	0.02	0.01	0.00	0.10	55.00	Negative
December 11, 1923	5.00	5.00	0.01	0.01	0.00	0.20	18.00	Negative

### Water Supply of Sumter, S. C.

City Water Works. Owned by city. Superintendent, W. W. McKage. In charge of collection of samples W. W. McKage. Chairman of local Board of Health, H. L. Tisdale.

Source: Fifteen wells, 6 inches in diameter, 70 to 430 feet deep, pumped. Pumps in pit 9 feet below surface. One mile from center of city. Capacity, steam 1,800,000; electric, 1,440,000 gallons per day. Not filtered. Services 100 per cent metered. Seventy-five per cent of buildings connected with city water supply. Sewerage system: Seventy-five per cent of buildings connected with sewer and have water closets. Sewerage empties into Turkey Creek on eastern side of city, and into Green Creek on western side of city, after passing through septic tanks. No garbage disposal plant. Garbage hauled and dumped on lot outside of city limits.

March 12, 1923	5.00	12.00	0.01	0.01	0.001	0.50	60.00	Negative
June 1, 1923	5.00	10.00	0.10	0.02	0.20	0.40	83.00	Negative
October 1, 1923	10.00	11.00	0.01	0.02	0.50	0.40	135.00	Negative
December 20, 1923	5.00	10.00	0.03	0.02	0.40	0.40	95.00	Negative

### Water Supply of Timmons ville, S. C.

Board of Public Works, Superintendent E. J. Lynch. In charge of collection of samples, E. J. Lynch.

Source: Three wells, 8 inches in diameter and 170 feet deep, on outer edge of town. Capacity, 432,000 gallons per day. Average consumption, 50,000 gallons per day. Consumption per capita, 20 gallons per day. Service metered. Eighty per cent of buildings using city water supply. Sewerage system: Sixty per cent of buildings connected with sewer and have water closets. Septic tank. Sewerage empties into Sparrow Swamp. No garbage disposal plant. Garbage burned and dumped into swamp.

March 14, 1923	50.00	6.00	0.01	0.01	0.00	0.00	82.00	Negative
June 2, 1923	20.00	6.00	0.01	0.01	0.00	0.10	137.00	Negative
September 4, 1923	15.00	9.00	0.01	0.01	0.00	0.10	85.00	Negative
December 13, 1923	10.00	4.00	0.02	0.02	0.00	0.10	85.00	Negative

### Water Supply of Union, S. C.

Municipal Electric Light & Water Works. Superintendent, W. B. Aiken. In charge of collection of samples, W. B. Aiken. Chairman of local Board of Health, W. H. Gibson.

Source: Creek, 2 miles from city. Capacity, 15,000,000 gallons per day. Filtered by mechanical filter. Treatment, alum and chlorine. Capacity of plant, 2,000,000 gallons per day. Average consumption, 1,000,000 gallons per capita, 83 gallons per day. Service metered. One hundred percent of buildings using city water supply. Sewerage system: Seventy-five percent of city sewered and have water closets. Sewerage empties into Buffalo Creek. No garbage disposal plant. Garbage dumped outside of city limits.

Sample Drawn	Color	Chlorine	Free Ammonia	Albuminoid Ammonia	Nitrogen as Nitrates	Nitrogen as Nitrites	Total Solids	Bacterial Indications of Contamination	Chemical Indications of Contamination
March 12, 1923 .....	5.00	7.00	0.04	0.02	0.00	0.10	100.00	Negative	Negative
June 5, 1923 .....	5.00	5.00	0.01	0.01	0.00	0.10	106.00	Negative	Negative
September 5, 1923 .....	5.00	6.00	0.01	0.01	0.00	0.10	132.00	Negative	Negative
December 18, 1923 .....	5.00	5.00	0.02	0.02	0.00	0.10	120.00	Negative	Negative

### Water Supply of Walhalla, S. C.

Board of Public Works. Owned by Town of Walhalla. Superintendent J. F. Bearden. In charge of collection of samples Geo. M. Ansel. Chairman of local Board of Health, Dr. J. W. Bell.

Source: Branch and Springs. Capacity, 504,000 gallons per day. Filtered through sand and rock filter. No treatment. Capacity of plant 504,000 gallons per day. Average consumption 132,831 gallons per day. Service metered 100 per cent.

Sewerage system: Nature of sewerage system—Gravity, automatic flush tanks empty in Creek. Twenty per cent of buildings are connected with sewer and have water closets. Sewerage empties into Gaire Creek and Bear Swamp Creek. No garbage disposal plant or incinerator. Garbage hauled off to two or three piles.

April 23, 1923 .....	5.00	8.00	0.01	0.01	0.00	0.00	35.00	Negative	Negative
September 5, 1923 .....	20.00	5.00	0.01	0.01	0.00	0.00	45.00	Negative	Negative
December 18, 1923 .....	5.00	4.00	0.01	0.02	0.00	0.10	61.00	Negative	Negative



**Water Supply of Winnsboro, S. C.**

Board of Public Works. Owned by town. Superintendent, T. R. Ellison. In charge of collection of samples, T. R. Ellison. Chairman of Local Board of Health, Dr. J. E. Douglas.

Source: Creek, 2 miles from city. Filtered. Capacity, 1,000,000 gallons. Treatment, with alum. Average consumption, 75,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered. Eighty percent of buildings using city water supply. Sewerage system: Eighty-five percent of city sewered. Seventy-five percent of buildings connected with sewer. Sewerage empties into Cathcart's Branch,  $\frac{3}{4}$  mile from city. Septic tank. No garbage disposal plant. Garbage dumped in low waste places.

April 3, 1923 .....	5.00	8.00	0.01	0.02	0.00	0.20	90.00	Negative
May 30, 1923 .....	30.00	10.00	0.01	0.01	0.00	0.10	117.00	Negative
September 13, 1923 .....	5.00	10.00	0.01	0.01	0.00	0.20	85.00	Negative
December 20, 1923 .....	5.00	8.00	0.01	0.01	0.00	0.20	150.00	Negative

**Water Supply of Woodruff, S. C.**

Board of Public Works. Owned by town. Superintendent, T. W. Cox. In charge of collection of samples, T. W. Cox. Chairman of local Board of Health, T. W. Cox.

Source: Two wells, one-half mile from city. Depth, 400 and 141 feet. Capacity, about 185,000 gallons per day. Service metered. Forty percent of buildings using city water supply. Sewerage system: Seventy-five percent of city sewered. Forty percent of buildings connected with sewer and have water closets. Two septic tanks. Sewerage empties into branch and creek. No garbage disposal plant. Garbage dumped in tank.

March 12, 1923 .....	5.00	8.00	0.01	0.01	0.00	0.00	175.00	Negative
June 5, 1923 .....	5.00	7.00	0.02	0.02	0.00	0.20	196.00	Negative
September 6, 1923 .....	5.00	9.00	0.01	0.02	0.00	0.10	235.00	Negative
December 18, 1923 .....	10.00	9.00	0.01	0.02	0.00	0.20	230.00	Negative

**Water Supply of York, S. C.**

York Water Plant. Owned by City. Superintendent, J. O. Wray. In charge of collection of samples, J. O. Wray. Chairman of local Board of Health, Dr. Whitesides.

Source: Branch  $\frac{3}{4}$  mile from city. Capacity, 800,000 gallons per day. Capacity of plant, 500,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 35 gallons per day. Service metered. Seventy percent of buildings connected with city water supply. Sewerage system: Fifty percent of buildings connected with sewer and have water closets. Sewerage empties into Fishing Creek on east and Turkey Creek on west. No garbage disposal plant. Garbage dumped on wornout land outside city limits.

March 31, 1923 .....	5.00	6.00	0.01	0.00	0.00	0.50	34.00	Negative
June 20, 1923 .....	5.00	7.00	0.02	0.01	0.00	0.10	103.00	Negative
September 8, 1923 .....	5.00	6.00	0.02	0.01	0.00	0.10	115.00	Negative
December 13, 1923 .....	5.00	7.00	0.01	0.01	0.001	0.10	110.00	Negative

# FINANCIAL STATEMENT

The following is a correct statement of the expenditures of the State Board of Health for the fiscal year 1923. All claims against the Board are itemized and rendered in duplicate, the original being attached to warrant of Comptroller General and forwarded to his office for payment—the duplicate being filed in this office.

## SUPERVISION AND CONTROL OF HEALTH.

Appropriation .....		\$2,000 00
A. Personal Service.		
A-3 Special Payments.		
Executive Committee @ \$10.00 per diem .....	\$760 00	
B. Contractual Services.		
B-2 Travel .....	544 13	
C. Supplies.		
C-4 Office Supplies .....	50 00	
D. Fixed Charges and Contributions.		
D-9 Contributions (Association Dues) .....	41 67	
Total Expenditures .....		<u>\$1,395 80</u>
Balance .....		<u>\$604 20</u>
Outstanding Bills?		

## SUPERINTENDENCE AND ACCOUNTS.

Appropriation .....		\$14,869 30
A. Personal Service.		
A-1 Salaries .....	\$9,400 00	
A-2 Wages .....	400 00	
B. Contractual Services.		
B-2 Travel .....	1,933 77	
B-3 Telephone and Telegraph .....	446 69	
B-4 Repairs .....	10 00	
B-5 Printing and Advertising .....	64 00	
C. Supplies.		
C-4 Office Supplies .....	600 00	
D. Fixed Charges and Contributions.		
D-2 Rents .....	1,578 58	
D-4 Insurance .....	15 30	
D-9 Contributions (Assn. Dues) .....	63 00	
G. Equipment.		
G-1 Office Equipment .....	43 40	
Total .....		<u>\$14,554 74</u>
Balance .....		<u>\$314 56</u>
Outstanding Bills?		

## CONTROL OF EPIDEMIC DISEASES.

Appropriation .....		\$32,600 00
A. Personal Service.		
A-1 Salary (Epidemiologist) .....	\$3,500 00	
A-3 Special Payments (Prof. Services) .....	140 00	
B. Contractual Services.		
B-2 Travel .....	1,276 99	
C. Supplies.		
C-6 Medical Supplies .....	27,000 00	
Total Expenditures .....		<u>\$31,916 99</u>
Balance .....		<u>\$683 01</u>
Outstanding Bills?		



## HYGIENIC LABORATORY.

Appropriation .....		\$11,500 00
A. Personal Service.		
A-1 Salaries .....	\$8,300 00	
A-2 Wages .....	450 00	
B. Contractual Services.		
B-1 Freight, Express and Delivery .....	22 90	
B-2 Travel .....	49 87	
B-3 Telegraph and Telephone .....	87 11	
B-4 Repairs .....	99 88	
B-6 Water, Heat, Light and Power .....	129 30	
C. Supplies.		
C-3 Feed and Vet. Supplies .....	46 45	
C-4 Office Supplies .....	988 09	
C-5 Laundry and Disinf. Supplies .....	8 00	
C-6 Medical and Surgical Supplies .....	352 69	
C-7 Refrigerating Supplies .....	149 00	
C-12 Other Supplies .....	337 87	
D. Fixed Charges and Contributions.		
D-9 Contributions (Assn. Dues) .....	20 00	
G. Equipment.		
G-1 Office Equipment .....	49 44	
G-6 Live Stock (Guinea pigs, Rabbits) .....	19 50	
G-8 Other Equipment .....	80 88	
Total Expenditures .....		\$11,190 98
Balance .....		\$309 02
Outstanding Bills?		

## BUREAU OF VITAL STATISTICS.

Appropriation .....		\$7,390 00
A. Personal Service.		
A-1 Salaries .....	\$5,820 00	
B. Contractual Services.		
B-2 Travel .....	50 00	
B-3 Telephone and Telegraph .....	80 00	
B-4 Repairs .....	10 72	
B-5 Printing and Advertising .....	363 25	
B-7 Other Contractual Services .....	101 75	
C. Supplies.		
C-4 Office Supplies .....	541 66	
G. Equipment.		
G-1 Office Equipment .....	200 00	
Total Expenditures .....		\$7,167 38
Balance .....		\$222 62
Outstanding Bills?		

## BUREAU OF RURAL SANITATION.

Appropriation .....		\$19,247 90
A. Personal Service.		
A-1 Salaries .....	\$13,003 30	
A-2 Wages .....	1,000 00	
B. Contractual Services.		
B-2 Travel .....	4,216 66	
B-3 Telegraph and Telephone .....	67 01	
B-4 Repairs .....	398 91	
C. Supplies.		
C-4 Office Supplies .....	380 48	
D. Fixed Charges and Contributions.		
D-2 Rents .....	162 00	
Total Expenditures .....		\$19,228 36
Balance .....		\$19 54

## MALARIA COOPERATIVE WORK.

Appropriation .....		\$14,700 00
A. Personal Service.		
A-1 Salaries .....	\$4,300 00	
A-2 Wages .....	3,189 20	

B. Contractual Services.		
B-2 Travel .....	1,316 45	
B-3 Telegraph and Telephone .....	172 34	
C. Supplies.		
C-4 Office Snpplies .....	548 00	
C-8 Educational Supplies .....	134 00	
C-12 Other Supplies .....	3,197 13	
D. Fixed Charges and Contributions.		
D-2 Rents .....	440 00	
Total Expenditures .....		\$13,297 12
Balance .....		\$1,402 88
Outstanding Bills?		

## BUREAU OF CHILD HYGIENE.

Appropriation .....		\$10,000 00
A. Personal Service.		
A-1 Salaries .....	\$6,120 00	
B. Contractual Services.		
B-2 Travel .....	2,000 00	
B-3 Telegraph and Telephone .....	199 35	
B-4 Repairs .....	5 00	
B-5 Printing and Advertising .....	76 10	
C. Supplies.		
C-4 Office Supplies .....	764 75	
C-8 Educational Supplies .....	227 09	
D. Fixed Charges and Contributions.		
D-2 Rents .....	540 00	
G. Equipment.		
G-1. Office Equipment .....	20 25	
Total Expenditures .....		\$9,952 54
Balance .....		\$47 46

## MATERNITY-INFANCY WORK (SHEPPARD-TOWNER ACT.)

Appropriation .....		\$6,000 00
A. Personal Service.		
A-1 Salaries .....	\$3,900 00	
B. Contractual Services.		
B-2 Travel .....	999 69	
B-5 Printing and Advertising .....	191 15	
B-7 Other Contractual Services .....	54 27	
C. Supplies.		
C-8 Educational Supplies .....	483 95	
Total Expenditures .....		\$5,629 06
Balance .....		\$370 94
Outstanding Bills?		

## HOTEL INSPECTION.

Appropriation .....		\$5,190 00
A. Personal Service.		
A-1 Salaries .....	\$3,240 00	
B. Contractual Services.		
B-2 Travel .....	1,900 00	
D. Fixed Charges and Contributions.		
D-4 Insurance .....	39 40	
Total Expenditures .....		\$5,179 40
Balance .....		\$10 60

## SOUTH CAROLINA AND PALMETTO SANATORIA.

Appropriation .....		\$54,075 00
A. Personal Service.		
A-1 Salaries .....	\$17,676 73	
A-2 Wages .....	1,977 09	56 00
A-3 Fees and per diem .....	623 50	



<b>B. Contractual Services.</b>		
B-1 Freight, Express and Deliveries .....	8 00	
B-2 Travel .....	711 57	
B-3 Telegraph and Telephone .....	209 48	
B-4 Repairs .....	785 65	
B-7 Other Contractual Services .....	1,398 10	
<b>C. Supplies.</b>		
C-1 Food Supplies .....	11,428 35	
C-2 Fuel Supplies .....	1,583 26	
C-3 Feed and Vet. Supplies .....	5,440 31	
C-4 Office Supplies .....	559 21	
C-5 Laundry and Disinfecting Supplies .....	315 05	
C-6 Medical and Surgical Supplies .....	783 74	
C-7 Refrigerating Supplies .....	910 00	
C-8 Educational Supplies .....	167 69	
C-9 Motor Vehicle Supplies .....	826 43	
C-10 Agricultural and Bot. Supplies .....	628 32	
C-11 Clothing and Dry Goods Supplies .....	836 59	
C-12 Other Supplies .....	1,959 90	
<b>D. Fixed Charges and Contributions.</b>		
D-4 Insurance .....	1,690 20	
<b>F. Materials.</b>		
F-1 Materials .....	20 75	
<b>G. Equipment.</b>		
G-1 Office Equipment .....	22 20	
G-2 Medical and Surgical Equipment .....	30 00	
G-3 Household Equipment .....	615 08	
G-4 Motor Vehicles and Equipment .....	664 20	
G-6 Live Stock .....	250 00	
Total Expenditures .....		\$52,116 40
Balance .....		\$1,958 60
<b>Outstanding Bills?</b>		
Total Appropriation S. C. State Board of Health .....		\$177,572 20
Total Expenditures .....		\$171,623 77
Total 1923 Balance .....		\$5,943 43

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